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The Mining Journal,

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FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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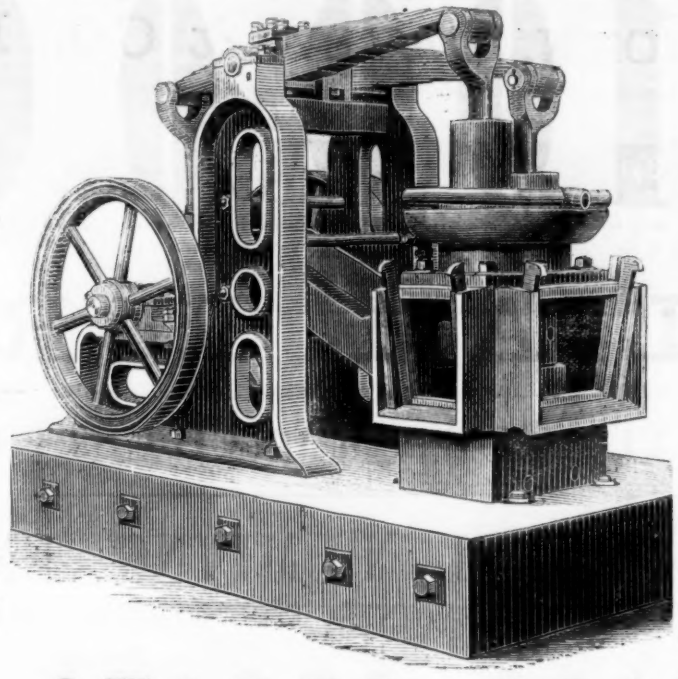

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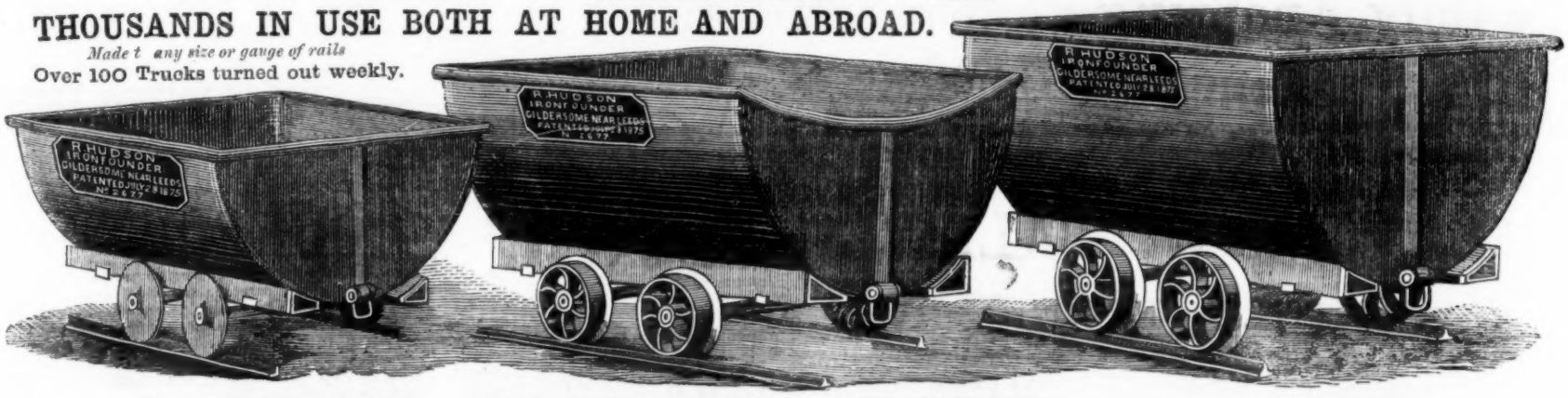

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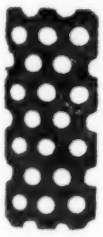

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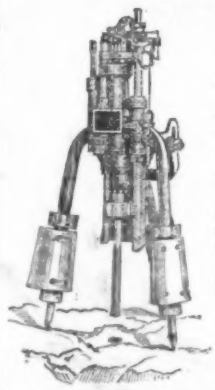

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IMPROVING THE QUALITY OF STEEL.

A series of compounds or preparations for hardening, softening, tempering, and improving the quality of steel, and for facilitating the welding, has been invented by Messrs. HANSWORTH and KUPFER, of Zurich, Switzerland. One of these compounds has the property of imparting to the steel great toughness and to improve its quality, and even to restore burnt steel to its original condition, the compound being more particularly applicable for tools. The compound, which is termed No. 1, is produced by the admixture of 200 parts by weight of rosin, 120 parts of liver oil, 60 parts of sheep's tallow, 30 parts of paraffin, 40 parts of colophonium, 20 parts of yellow prussiate of potash, 10 parts of chromate of potash, 10 parts of refined borax, 15 parts of powdered ox hoof, 15 parts of tartaric acid, 10 parts alum, 10 parts of soft soap, 20 parts of charcoal powder from lime tree wood, 15 parts of burnt ivory, 5 parts of dry cooking salt, 10 parts of gum arabic, 5 parts of aloe powder, 5 parts of gentian powder; these ingredients, after mixing, are boiled together for an hour. If hardened steel is to be operated upon, the tools, after having been treated in a heated condition with the above compound, are cooled in the liquid compound No. 7, hereinafter described. By this means they become as hard as glass, combined with such great toughness that in working with them they do not split off, but are only gradually blunted. Compound No. 2 has similar properties to No. 1, and is particularly suitable for instruments and cutting tools that easily split off or become crooked in the usual hardening process. It consists of the admixture of 100 parts by weight of resin, 100 parts of colophonium, 50 parts of lard, 25 parts of yellow wax, 50 parts of liver oil, and 12·5 parts of alum. After mixing, the compound is boiled for half an hour under constant stirring. Compound No. 3 has similar properties to Nos. 1 and 2, and is more particularly suited for larger tools than those for which No. 2 is used, more particularly for hammered or welded tools. It consists of 125 parts byweight of refined borax, 500 colophonium, 100 parts of gum arabic, 150 parts of prussiate of potash, 100 parts of chromate of potash, 25 parts of aloe powder, 25 parts powdered sal ammoniac. These ingredients are merely well mixed together.

For the purpose of softening steel to such an extent that it can be cut with a knife, compound No. 4 is used. If the steel be softened by this compound it can readily be restored to its original hardness by treating with compound No. 3, this compound is therefore principally applicable for engraved dies or plates. The compound consists of 100 parts by weight of charcoal dust, 100 parts of burnt lime, and 10 parts of guano, all well mixed together. Compound No. 5 is a powder for welding steel, by means of which steel can be welded at a temperature much below a white heat, and accordingly by its application the burning of the steel by the welding is very greatly prevented, and the steel can afterwards be readily completely regenerated by the use of either of the compounds Nos. 1, 2, or 3. The compound consists of 500 parts by weight of calcined borax, 5 parts of prussiate of potash, 5 parts of sal ammoniac, 2·5 parts of colophonium, and 50 parts of steel filings, all well mixed together. Compound No. 6 forms a hardening liquid, which prevents the splitting off and distortion of the steel articles. It consists of 150 parts by weight of refined borax, 100 parts of powdered sal ammoniac, 500 parts of prussiate of potash, 500 parts of zinc vitriol powder, all dissolved in about 50,000 parts of water. Compound No. 7 is a hardening liquid with very great hardening powers; if tools are cooled in it they become as hard as glass and also tough, and they can even be used for cutting hard castings which can usually only be operated upon by means of diamonds. It consists of 250 parts by weight of zinc vitriol powder, 125 parts of arsenic powder, 125 parts of sal ammoniac powder, 125 parts of tartaric acid, 250 parts of prussiate of potash, and 500 parts of dry powdered cooking salt. The ingredients are first finely powdered, and then, the salt having been first dissolved in 25,000 parts of water, the other ingredients ar added thereto while boiling.

Original Correspondence.

INDIAN GOLD MINES.

SIR,—We hear so little news of the progress of our gold mines that conclude the following extract from the Madras Mail will be acceptable to your readers:—

"COLAR GOLD MINING COMPANY.—This company will commence crushing almost immediately. The mill is erected, and nearly 1000 tons of auriferous stone and mullock are at surface, an average of which is said to have given 1¼ oz. to the ton in one of Readerius (Readwin's) pans when tested some little time since in London in 1 cwt. charges."

I also enclose extract from same paper relative to a discovery in America for the extraction of gold from quartz. Supposing this discovery to be true, it seems impossible to estimate the benefit it may have on Indian mining operations. Many of your Indian readers would be glad to hear from you of its truth, and, if true, your views in respect to its benefits:—

"It is reported from America that a new method has been adopted for the detection of gold in pyrites. The results already obtained by this process are such as to stagger the most bigoted advocates of a gold monetary standard." INDIAN SHAREHOLDER

Madras, April 28.

INDIAN GOLD MINES—THE WYNAAD DISTRICT.

SIR,—I feel sure, as a lover of fair play, you will allow me, through the medium of your widely-circulated and valuable Journal, to state that the mining captain who wrote the letter commented on in the *Mining Journal* of March 25 is no other than myself, and not "a discharged official." In reference to the letter I wrote the Times of India, I will, however, make the following admissions:—I may not be able to look at the prospects of Indian gold mining with as clear a vision as some people, as I do not wear gold spectacles, nor have I a bankrupt coffee estate to sell; and now I am quite willing to wait the verdict of the shareholders as to the truth of my letter, which will not be long in forthcoming. A MINING CAPTAIN.

Vythery, South Wynaad, May 1.

The extract referred to says: A somewhat sensational statement, on the authority of a "Wynaad Mining Captain," has been in circulation to the effect that "there is not a single reef or lode in Southern India that will pay working expenses;" but that he knows one Indian gold mine where stone, assaying 30 ozs. or 90 ozs. to the ton, was obtained from a reef which now does not contain a trace of the precious metal anywhere. The absurdity of the statement, if intended as detrimental to Indian gold mining, is obvious, for any reef which in part of its course, or in the mullock accompanying the reef, yields such a brilliant return of the precious metal would be not only worth working, but would assuredly yield large profit to the shareholders. As the result of searching enquiry it may be stated that there is no doubt that this "well-known mining captain" is a discharged official of one of the companies who has been spreading these reports. The truth or otherwise of the assertion being of paramount importance to all concerned, direct enquiry has been made of the secretaries of nearly all the Indian gold mining companies, and they unhesitatingly state that, so far from there being the least justification for the statement thus prominently put forward with a view to depreciate the property, the position of affairs is exactly the reverse.

THE GOLD AND DIAMOND MINES OF SOUTH AFRICA.

SIR,—At the present moment Kimberley is not the best of places to live in. The result of the attempted riot on Wednesday last is a further demoralisation of the Kaffirs, who after dark perambulate the streets by thousands, armed with knobkerries, and threatening indiscriminately all they meet. Although up to the present they have confined actual operations to breaking each others heads, their conduct towards the whites is much more defiant than I have ever seen it before. Should there be a breaking out of the blacks in this place the white people will have themselves to thank for it. On Saturday last a duel was fought with pistols between Mr. Houton and Mr. Greenfield. As Mr. Houton suffers from paralysis through his right side, and can only stand on his left leg and shoot with his left hand, Mr. Greenfield must have had a slight advantage. They fired at twenty paces, but fortunately neither was hit, and the seconds would not allow them to fire the second shot. Although it was known to every person in Kimberley two days beforehand that this duel was to take place, no attempt was made by the authorities to prevent such a disgrace to a civilised community. The fact is, Mr. Houton is the sworn enemy of the big illicit diamond buyers, and consequently every means is being tried to get rid of him. On Friday last the editor of the Independent produced a leader which was a disgrace to modern journalism; and on the afternoon of the same day one of the parties who had been maligned horsewhipped the said editor until the upper portion of his body was like the outlines of the map of South Africa.

Last week a man named Walters shot Mr. Clark, his employer, because he discharged him without notice; death was instantaneous. On Friday another man was sentenced to death for murder, and 58 natives were tried for manslaughter. Housebreaking and robbery from the person is very common, and altogether things are somewhat lively. The Daily Independent says duels by day and free fights by night break the monotony of Kimberley life. This sort of thing is becoming somewhat tiresome, and we cannot afford the space to record all the disgraceful brawls that take place in our midst. This journal is not large enough for the purpose.

It is somewhat gratifying to know that amidst so much turmoil the number of our dividend-paying companies is steadily on the increase. This is owing entirely to an improvement in the management. At Bultfontein, the French and Desterre, the Pullinger, and Alliance Companies are likely to pay small dividends. The Bultfontein Central will also pay 2 per cent. Most of the other companies in this mine are very badly managed. At Dutoitspan the Ne Plus Ultra Company have declared a dividend of 7½ per cent. for the year, with a fair prospect of doing better. Dutoitspan generally is a good mine, but many of the companies are so badly managed that it is impossible for them to pay dividends. Otto's Kopje if properly conducted is likely to turn out a good mine. At a large meeting of shareholders held in the Library on Friday last the late management was strongly condemned, and by a unanimous vote it was decided to dispense with the services of Mr. Kilgour, who is also connected with the London and South African Exploration Company. At Kamfersdam the yield of diamonds has improved during the past week, but until they get more water for washing I do not see how it can pay.

In the Kimberley Mine there is a decided improvement generally; and the reef difficulty is being removed with greater dispatch than at any previous period. The Central Company alone is paying 108,000*l.* per annum towards removing the reef. The Barnato Company are finding large quantities of diamonds; I have seen some beautiful stones from these claims during the past week from 4 up to 80 odd carats. The Central Company are also finding remarkably well. The Standard Company are finding well, and pays a dividend of 10 per cent. for four months. The British have declared a dividend of 8 per cent. for the quarter, with a fair prospect of declaring from 12 to 15 per cent. next quarter. It will be greatly to the interest of both companies should the Barnato and British amalgamate. The French Company are doing very well indeed, and are confining their efforts more than any other company to the removal of reef.

Jagersfontein without doubt produces the best diamonds in South Africa; notwithstanding which there is not a company in the whole formation that is paying. At Koffyfontein the finds are very regular, and there is a fair prospect of two out of the five companies paying before the end of the year. The traffic in stolen diamonds here is something dreadful. It was stated in Parliament last week "that diamonds to the extent of 2,000,000*l.* sterling were stolen annually, and that seven-tenths of the population were implicated."

I am in a position to pronounce the Crocodile River gold fields in the Transvaal to be a downright swindle. I have received several letters from prospectors who have given the place a fair trial, and are disgusted with their ill success. During the past week several diggers have arrived here, hard up, from the Lydenburg gold fields. They say that unless "Benjamin," the "Attorney-General and Co.," can succeed in depriving the old diggers of their just rights, they will be saddled with a white elephant. The late Gold Commissioner of the Lydenburg gold fields is here. He says that "the claims of Cope, Hampson, and White, at Waterfall's, and those of Prettyjohn's at Pilgrims are really good." It is generally considered that gold purchased from these claims has been used for salting over 40 other worthless concerns. English investors have only to exercise a proper amount of caution with regard to the Transvaal, and I will undertake to say that over 95 per cent. of the reputed gold mines will in a few months die a natural death. The tyranny of the Transvaal Government towards British subjects increases daily. Lieut.-Col. Ferreira has started on another butchering expedition. The Boers, being largely reinforced from different parts of the Transvaal, were to have attacked our old ally Mankoraane on Monday last, the particulars of which are hourly expected. As our old ally is short of guns and ammunition it is generally thought that him and his followers will soon be numbered amongst the innumerable throng of murdered Kaffirs.—*Kimberley, April 27.* CORRESPONDENT.

THE LYDENBURG GOLD FIELDS.

SIR,—For some weeks past I have been reading with considerable surprise letters in the Journal signed "Correspondent," which among other news of mining interest from South Africa purport to give information relative to the Lydenburg gold fields. "Correspondent's" picture of these is a most dismal one, and he seems to phophesy almost certain failure for all who embark in the industry of gold mining in that locality. To be sure he makes an exception in favour of a few who are lucky enough to hit upon paying patches, but the general tone of his reports is condemnatory, and if they find favour with the British capitalist are more than likely to impede the flow of capital in that direction. With due deference to "Correspondent," who admittedly only gives second-hand information on the point, I maintain this consequence to be a most undesirable one, and beg you will permit me, as one who has had some two years' experience at the fields in question, to give in a few words my reasons for so saying. The Lydenburg or New Caledonia gold fields embrace an area of over 100 miles in circumference, and are divided into three chief diggings—Spitzkop, Mac-Mac, and Pilgrim's Rest. Of these, that first prospected—viz., Spitzkop has always been held as the richest, and Mac-Mac as least yielding in precious metal. Outside of this area an entire stretch of country extending from the Crocodile river on the south to the Sutherland ranges on the north, has also been partially prospected for gold, in some parts with marked success, in others with only show of colour, which latter as "Correspondent" remarks can be obtained by panning anywhere in the locality. The chief operations, however, as far as digging goes have been confined to the districts in the immediate vicinity of the three head centres already named, and further, since the Secocoeni war to a small but rich patch of country lying immediately north of that chieftain's kraal. The white male population of the entire district amounted in 1878 to 300, many of whom were engaged in storekeeping and trading only, while another large proportion was represented by ex-volunteers from the diamond fields, who were hanging on in the district in hopes of obtaining the Government reward promised by Sir Theophilus Shepstone to those who fought in the Secocoeni campaign of 1876—77. Not more than one-third of the entire number were *bona fide* diggers, while again of these not perhaps more than half were able to work their claims. At no period has the entire white population exceeded 500.

Water it will be admitted is a *sine qua non* in gold mining, and neither at Spitzkop nor at Pilgrim's Rest has much water at any time been available except at an outlay which would be impossible for the simple digger to contemplate. What little there was has long been appropriated by those first in the field, and these men there is a profusion of evidence to show made a very good thing out of their claims. The remainder who had no water excepting that available from the tailraces of the proprietors had it is needless to remark a very poor chance indeed. The practice of the proprietors was and still is to convey their water to those claims furthest from the source of water supply and gradually work back towards it, sluicing ground away as they went. By thus gradually working claim upon claim patchings of gold did not much affect them, as they made up in one for loss in another, while the man who had no water rights was entirely shut out from even paying ground to his natural disappointment. Up to 1877—I have it on the authority of Mr. Turton, the late manager of the Branch Cape Commercial Bank at Lydenburg—gold of the value of 300,000*l.* was sent home, freight paid on, and of this sum 75,000*l.* went home in the early part of 1877 alone. I cannot consider this to be such a very bad return for work done considering the comparatively low number of those who actually were at work, and I feel sure that "Correspondent" himself when he comes to analyse the matter will view it in the same light.

I so far agree with him that to the man without capital the Lydenburg fields offer no attraction, and even to him with moderate capital only I should offer Punch's advice to those about to marry—"Don't." Failure is almost certain to result, and another unmerited bad character will be given to what is really a most promising gold field. By no manner of means are these "poor man's diggings," but let large capital—the capital of a wealthy company of adventurers—be employed; let the Sabilala and Spekboom rivers be led into the auriferous district—an easy engineering feat—institute a system of "hydraulicing" which laughs at patchiness, and which is eminently suited to the configuration of the country, and the gold fields of Lydenburg cannot prove other than a most brilliant success. It is ridiculous to imagine that the diggers would resent the granting of licences to large mining and water companies. The real bone of contention lies between the would-be concessionaires and the petty water monopolists. As for the bulk of diggers they, I am confident, would hail the introduction of capital with enthusiasm.

Kolar Gold Fields, India, April 30. ROWLAND J. ATCHERLEY.

PESTARENA GOLD MINING COMPANY.

SIR,—Although the position and prospects of other companies are discussed in the *Mining Journal* for a long while the Pestarena has not at all come under review. Of late the working resources and mill power at the mines have been much increased, and the yield of gold has been manifestly larger, especially during the present year. In the year ending June 1879 the yield was 5440 ozs.; in the following year it was 6275 ozs.; and in 1880–81 it reached 7249 ozs., thus showing an important and continuous increase. During the first four months of 1881 the average monthly yield of gold was 533 ozs.; in the first four months of the present year the monthly average has risen to 626 ozs. Added to the encouraging gold returns is also the promising character of the work in progress for opening up the new Pozzone property of the company, which may conduce to a still better state of things, Under these circumstances it is really surprising that the public give so little attention to the property.—*May 22.* X.

NEW QUEBRADA COMPANY

SIR,—As there is every probability of largely increased consumption of copper, and better prices from the extension of electric appliances, our shareholders ought to have a clear statement from our directors at the meeting next month as to what steps they propose to take advantage of this state of affairs. It is now certain that the supplies at the mines are practically unlimited, and can be marketed at a profit, but as long as the increase per annum is so small the profits will be all absorbed by the railway, which is now our greatest obstacle to progress and profit. The contract with the railway stipulated for a minimum of 20,000 tons, but surely it was not understood that the line should be built only to carry about that amount, yet I know that is the only reason the output is not vastly increased, and small sailers can only be used, as the railway was allowed to break their contract to make a very expensive piece of line across the sea to an island which would have given wharfs instead of an open roadstead and barges.

Only one boring machine has been introduced at the mines; such a thing can scarcely be imagined in these progressive days, particularly in such a climate, and labour so inferior. The fact may be that our directors are only interested to a small amount in the mine. Perhaps as the option to buy the railway soon expires we may have some alteration, but it is hard to see other copper companies with not half our advantages earning enormous sums only, owing to the business ability of their directors, in which ours seems entirely wanting. Could not our Chairman prevail upon his colleague, Mr. Henry Doetsch, to accept the vacant seat on our board. The success of the Rio Tinto is admitted to be to a great extent owing to him.

Camberwell, May 23. T. G. W.

COLORADO MINES—No. XVII.—BELLE ISLE

SIR,—I thought I had pretty well ventilated in former articles the Buckskin district, but every month some new discovery is made, and in the present case calls forth especial comment, and more especially so as English capital is about to be introduced into this locality, and for which there is an abundance of room for profitable investment. Here large claims may be obtained, and the Government titles whether by pre-emption or patent attainable; the lodes that cross the Buckskin valley are in some instances at right angles, and others oblique with the creek according with its sinuosity, but most of them have a north-easterly trend. Many of them have a vertical dip, but most incline to the south-east. A few, however, bear to the north-west; these may be called caunters; they are very rich in gold and copper. The Belle Isle lode runs N. 28° E. magnetic. The variation here is 14° 30′ east, while in Cornwall it is 6·30 west, or was so when I left there 28 years ago. The dip of the Belle Isle lode is 80° eastward, and as far as yet cut into from the shaft, which is 55 ft. deep, including a 5 ft. sump is 4 ft. wide, but as only one wall is positive it may be much thicker. The lode was discovered in the bed of the creek, and an adit level driven 45 ft. on its course. A vertical shaft was then sunk, but as the miners did not calculate on the dip it was put down on the wrong side; a cross-cut therefore became neccessary. This passed through the lode in the hanging wall; the foot wall or where it should be looked for the ground is disordered. This is a thing of very common occurrence in many of these mines even at much greater depths. The lode lets down a good deal of water, apparently coming from the north or mountain side. It shows the lode to be porous, which is one of the best of all signs, for as we say at home—"more water, more tin." This mine being in the valley the geological formation is the upper silurian, which lithologically may be described as consisting of granite, felspar, gneiss dolomite limes, hornblendic gneiss, diorite-syenite, and nearly all the schistoze rocks, heavy beds of ferruginous quartzite, and abnormal masses of porphyry and trachyte appear in different places. The matrix of the lode is quite segregated, although partially stratiform. Aggregated nests of beautiful quartz crystals in fine acicular prisms are found in vughs, many are fine cabinet specimens. The gangue consists of a ferruginous quartz, felspar, alumina, dolomite clays, the flookan of the lode. They are quite unctious to the feel, very plastic, and may be moulded in many articles of utility. The metallic ores are copper and iron pyrites, with silver-lead and zinc blende, magnetite, antimonial and arsenical mundic. There is much talc but very little mica. I took samples all across the lode and divided them into four parcels for the purpose of quantitative analysis as a primary means of valuation. These have been subjected to a very careful system of panning concentration with the following result:—

Samples.	Specific gravity.	Per cent. in bulk.	Weight per cubic foot—lb.
No. 1.—Copper, lead, and sulphuric iron	3·55	60·00	221·00
No. 2.—Arsenical mundic	2·73	11·30	170·52
No. 3.—Antimony and blende	2·67	10·00	166·0
No. 4.—Quartz, ferruginous	2·60	—	145·50
No. 5.—Magnesian clays, dried	126·00	—	78·75
No. 6.—Slimes, clear and condensed, and perfectly dried	195·00	18·00	124·87
No. 7.—Calcined after concentration	3·00	—	187·50
		100·00	

Sulphur eliminated 15 per cent. With this some of the arsenic went off, and which was not collected. Now it will be seen all these ores are exceedingly light, and I think unusually so, but they will become more dense in depth.

The average sampling gave in metalloids.....per cent.	78·80
Slimes, not appreciably metallic.....	21·20
	100·00

It may be noted that the slimes carry more silver in proportion to bulk weight than the best ore itself, which shows that silver bearing ores should be subject to a dry working process where such is practicable.

ASSAYS FROM SEVEN AVERAGE TESTS.—Gold in ounces, 0·60; silver 18·83; lead, zinc, antimony, 30 per cent.; copper 12; iron 11·80.—Volatile: Arsenic 10; sulphur 15—which makes 78·80.

I class these as all metalloids. If we take the lode at 4 ft. thick, 75 per cent. or 3 ft. of it may be safely calculated as metallic mineral. By the foregoing table it will be seen from the positive weights that 60+221 lb.×11·90; 170·52+10·10×166=205·12÷2000 per ton. American standard=11·76 tons per lineal fathom of the lode. This is a large quantity of ore in a lode of at so shallow a depth of working. The commercial value therefore stands thus—

Gold at $20 per ounce	$12·00
Silver at $1 00 „	18·83
Lead, zinc, and antimony, at 50 cents. per unit.	15·00
Copper at $1·50	15·00
Per ton	$60·83

The iron and volatiles and other bye-products are not taken into valuation. Then 11·76 tons×$60·83 gives $715·35 per lineal fathom of lode.

MEERSCHAUM.—In a general analysis of the ores in bulk what was taken in the slimes as kaolin on closely extracting all the metallic portion and filtering the natant liquid it was found to be a silicate of magnesia, with very little alumina, and free from any oxides of iron or other metalloids. When dried in thin cakes it was quite white, and without any water of crystalisation. I have not yet for want of time to make a very close analysis chemically. I think, however, there is a deficiency of silicial acid, but this can very readily be added. The pure Turkish meershaum clays which go by the name of "sea foam," as imported into Germany and New York, is said to contain 50 per cent. of silica, 25 per cent. of magnesia, and 25 of water. Now the only difference in these Colorado samples and the above is in the silica and water. The samples I have here in my office do not contain 10 per cent. of water; there is scarcely a trace of sulphate of lime (gypsum), consequently no water of crystalisation. We may therefore call it a pretty good meershaum clay. Preparations are being made to establish a manufactory of meerschaum pipes of the refined stuff, and porcelain of the coarser material. This will inaugurate an entirely new industry in the state. The sequel of this discovery will be duly chronicled in subsequent article.—*Alma, April 26.* CHARLES S. RICHARDSON, G.M.E

COAL TRANSPORT.

SIR,—A leading coalowner thus addresses me—"I quite agree with you that something must be done to relieve the coal trade throughout the kingdom from the permanent depression that has settled upon it, and I shall be very glad to co-operate with you in any way I can to carry out your views." Having contributed exhaustively on this all-absorbing subject to the Journal, it may be deemed opportune to allude to the following data emanating from the very highest practical authorities in support of the system I promote, one preponderating advantage of which consists in enabling 1000 tons cargo to be borne on the ocean on six feet draught, whereby steamers can with regularity load in Trent Dock when completed, at Keadby, at Brough Ferry, without additional outlay on the part of the North-Eastern Railway, and at Boston town much more advantageously than at Grimsby, Hull, or Goole, the steamers passing under all bridges:—The eminent engineer, Mr. John Penn, Greenwich; a leading London Shipbuilder; the Surveyor-General of the Board of Trade; an Admiralty Harbour Master; two well known Westminster Civil Engineers; two captains and two chief mates of a steamer as proposed; a leading official in the Construction Department of the Russian Admiralty; the largest Russian Shipbuilding and Engineering Company chiefly employed by the Imperial Government; a well known Engineering firm in Germany, the managing partner having served with Messrs. Humphreys and Tennant;

also Messrs. Palmer, the largest shippers of grain in the Baltic, in a memorial in favour of the system to Prince Bismarck, &c. As quoting these certificates and data *in extenso* involves the absorption of far too great a portion of your valuable space, I hold the fullest details, plans, and diagrams subject to the most rigorous scrutiny. I am desirous of securing the active co-operation of the combined coalowners, as I reject all partial action as foreign to the scope of my scheme. If they will extricate themselves from the chronic railway thraldom under which the most important industry of the country writhes they have now an opportunity afforded them which may not recur. W. J. THOMPSON.

Little Tower-street, May 22.

RICHMOND CONSOLIDATED MINING COMPANY, AND "D."

SIR,—The question has been put to me in one instance whether I am the writer of the articles which appear in the *Mining Journal* bearing the signature "D." On another occasion it was assumed I was, and remarks made accordingly. It is true I have had opportunities of knowing something about the Richmond Mine, and have also foretold in a great measure its present position. There is, however, no one knows better than yourself that, although I am a Davies, I am not the writer, nor have I anything to do directly or indirectly with the penning of those articles. Whenever I send anything to the *Mining Journal* I sign my name in full, as I do now

Dolcaradog, Machynlleth, May 25. EDWARD DAVIES.

DYNAMITE VERSUS BLASTING GELATINE.

SIR,—The attention of our clients, the Nobel's Explosive Company (Limited), has been drawn to the publication in last week's *Mining Journal* to a letter from H. Waddington, in which a statement is made that the company's No. 1 dynamite contains "not 65 per cent. but about 62 per cent. of nitro-glycerine." This statement is absolutely untrue. Dynamite No. 1, as manufactured by our clients, is defined in their manufacturing license as consisting of not more than 75 parts by weight of thoroughly purified nitro-glycerine uniformly mixed with 25 parts by weight of infusorial earth known as kieselguhr, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of the nitro-glycerine. The company in manufacturing endeavour to obtain the absorption of as much nitro-glycerine as possible without laying themselves open to a prosecution for putting in more than the licensed quantity, and it can be easily understood that in an article like kieselguhr the powers of absorption change with the different parcels used, and there might be, and there is no doubt, a slight variation in the quantity of nitro-glycerine from time to time absorbed, but the company have never attempted to make and sell a No. 1 dynamite with such a low proportion of nitro-glycerine as either 62 or 65 per cent., and our clients maintain that this dynamite is on the whole the best and strongest in the market.

Furthermore, Mr. Waddington is again incorrect in his statement as to the quantity of nitro-glycerine contained in the No. 2 dynamite. According to the license for manufacturing, dynamite No. 2 consists of not more than 18 parts by weight of thoroughly purified nitro-glycerine uniformly mixed with 82 parts by weight of a pulverised preparation composed of nitrate of potash 71 parts, charcoal not less than 10 parts, and of purified paraffin (or ozokerit) one part (or nitrate of potash 72 parts, and charcoal not less than 10 parts) by weight, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

We have sent a copy of this letter to Mr. Waddington calling upon him to at once withdraw the statements made in his letter to the *Mining Journal*, and we have to request that you will, and forthwith, disavow his statement. J. AND R. GOLE.

Lime-street, May 23.

DYNAMITE VERSUS GELATINE.

SIR,—Kindly correct in next week's Journal—Nobel's, No. 1, read 75 per cent. for 65, and 72 for 62 per cent. of nitro-glycerine—errors in copying; and oblige— H. WADDINGTON.

May 22.

UNIFICATION OF TIME.

SIR,—In last week's *Mining Journal* I see an article with the above title. I beg to say that the idea on this subject is far from new, as my brother, the late John Barwise, of St. Martin's-lane, introduced that system more than 40 years ago, and illustrated it practically by erecting a large dial outside the Polytechnic Institution, and with several smaller ones in various parts of that establishment, which were uniformly worked by a single regulator, having a compensated mercurial pendulum vibrating from east to west, to which was attached a steel point, which was adjusted so that in the arc of its vibrations it was influenced by two magnets at the poles of its arc of vibration, that on one side being a positive and the other a negative; to these were attached 200 miles of wire, which were coiled down in the cellar of that Institution, and attached to the various dials.

The purpose of his invention was to have one such regulator at the London terminus of each system of railway, which should show the Greenwich time, and from which the electric wire could be connected with all the dials at each respective station, on which should be shown the London time by gilt hands, and also the time of each station by black hands, so that the time might be distinctively marked, and to ensure precision the minute hand was moved at the minute, a motion technically called a "dead beat." He did not succeed in getting the railway companies to adopt it, although they all acknowledged its utility. JACKSON BARWISE.

EARLY RECOLLECTIONS AND RECENT EVENTS—No. IV.

SIR,—It is generally known that miners are migrants and emigrants. Whenever one mining district in our own country fails to give sufficient employment for the mining population resident therein many of the miners migrate to other home districts. Miners, for instance, from the Gwennap district, will resort to the Liskeard district, or *vice versa*, and so between the Devon Great Consols to St. Just miners move according to circumstances. But the principal movement has been by emigration to almost all portions of the world where mining is carried on. Cornish miners may be found in nearly every mine under the sun, and no men are better qualified than they for the work of subterranean development.

When Capt. W. Martin was agent at Tresavean, about 40 years ago, he and his companion had a narrow escape of their lives. They were descending a ladder in Wheal Comford when it slipped off its fastening and dropped into many fathoms of water. They rose one after the other to the surface of the water, held fast to something, and were saved.

In the year 1839, when I was surveying Gwennap for the tithe commutation, two men engaged underground at Poldory, in the United Mines, had also a singularly narrow escape. I think it was on a Saturday. They were rising in a winze above the bottom level. By the falling of a stone into water they found that the engine was stopped. They descended, and found the level which led to the engine-shaft full to its back. What should they do? To remain there would be certain death, and to rush through the water 30 fms. or 40 fms. was dangerous, but taking the latter as the least of two evils, they resolved to rush through, one after the other, to the engine-shaft. So inflating their lungs as much as possible, they pushed their way through the water to the shaft, and rising to the surface there, were safe.

The most wonderful escape from death in an awful position was that of a kibble-filler in the United Mines, which occurred about 40 years ago. The man had filled the kibble, which was attached to a steam whim, and gave it a push with his foot to move it from the plat. To his great horror his foot was caught in a slit in the kibble, and he found himself being drawn up the shaft, his head, of course, hanging down. In that position he was drawn to the surface, about 200 fms., and landed safely! It was almost a miracle.

Some years ago I was informed that a miner in one of the St. Just Mines (I think Levant) fell down a shaft 40 fms., and was able to climb to the surface afterwards. Fifty years ago a kibble-filler at Wheal Damsel fell down a shaft 200 fms., and was dashed to pieces. There is an engine-shaft at Clifford Amalgamated 200 fms. perpendicular; and there is one at Fowey Consols 300 fms. perpendicular. I question whether you will find in England a shaft similar to the last mentioned. About 60 years ago a murderer made a mistake in shooting Mr. Rouse, of Whitehall, instead of the late Mr. Michael Williams, who, it was said, he meant to shoot, because at that time Mr. Michael was somewhat unpopular with the miners. Mr. Rouse lived two or three days after. The murderer, under suspicion, was confronted with the dying man, who merely shook his head, so that the villain escaped the halter. I believe that Mr. Rouse was sample taker for one of the copper companies - a careful man. I think that the late Mr. Joseph Morcom, of Whitehall, succeeded Mr. Rouse in that capacity. The house is now occupied by Mr. Pearce, of the Tin Office, Scorrier. Another house at Whitehall is occupied by Capt. Southey, late manager of West Chiverton, which house was formerly the residence of Capt. Josiah Harvey, brother of the late Mr. Collar Harvey, of St. Day. Capt. J. Harvey lived largely on pasties. He was the manager of Poldice 50 years ago, where he encouraged all kinds of fun. Since I went to Gwennap in January, 1827, death has made almost a clean sweep of the generation then living. There is scarcely one left that I then knew. R. S.

Truro, May 24.

GREAT EAST WHEAL VOR.

SIR,—I was quite surprised to see a letter from Capt. Harris in last week's Journal respecting the above-named mine, which speaks very disparagingly of that property. It is a well-known fact that all the Old Wheal Vor, Wheal Metal, and Truman's lodes traverse the whole length of this sett, and the Halbatize cross lode and lead branch that made the riches in Wheal Metal are in this sett, and paid 100,000*l.* in dividends, and Old Vor paid between 500,000*l.* and 600,000*l.* profits. This sett is nearly entire virgin ground, only a few fathoms sunk on the course of the lode; and I can assure you that I have seen as good stones of tin raised from this mine as any mine in the neighbourhood at such shallow depth, many of them more than half tin, and it is surrounded and just in the centre of several rich old mines—Great Wheal Vor paid between 500,000*l.* and 600,000*l.*; Wheal Metal, 100,000*l.*; Polladras, 103,000*l.*; Great Wheal Fortune, Great Work, and several other mines that gave enormous profits, and have the same formation of country as the celebrated Old Vor. Any person can take a very poor stone from a rich lode; perhaps that is what Capt. Harris has done. Perhaps Capt. Harris is afraid the present party will get down to the riches left in Wheal Metal Mine by him when he was manager, where the lodes are left worth from 100*l.* to 250*l.* per fathom; and there are men alive now to prove that. I do not see any object in Capt. Harris's statement, as formerly he spoke in the highest terms of this sett, without he has ill-will toward all the locality. I have always heard this piece of ground well spoken of by all the practical miners of this district; and by the experience I have had, I firmly believe this to be a good and valuable mining property, and will no doubt well pay the present company for their outlay. No man alive can tell what the property is worth until it is developed, but this has every appearance of being a celebrated mine sett.

I shall feel obliged if you will insert the above letter in next week's Journal.

That tin from the mine has been stolen: the question may be fairly asked, who stole it, and who received it?

Polladras, Breage, Helston, May 25. E. R. RIDINGTON.

GREAT EAST VOR

SIR,—The letter of Captain Harris contained in the Journal of Saturday last excited my surprise on the following accounts:—1. Because, as I learn, he had no authority to enter the ground to take samples of the tinstone, nor is he known to have been there; 2. Because it is contrary to the usual conduct of mine agents to gratuitously, and without reason, condemn a mining property; and, 3. Because the statement regarding the produce of the tinstone is grossly understated. Some few weeks ago I visited the mine, and had samples taken and vanned, when I found the yield to be very rich. If the tinstone carried to the stamping-mill yielded only 15 cwts. of black tin, as Capt. Harris says, the proprietors must have been robbed. I called at the mine again to-day, and took fresh samples from the lode in the shaft 7 fms. from surface, and I found it true that the yield was very little below 50 per cent. Of course I do not mean to assert that the whole of the lode will yield at that rate. Whenever I make a statement respecting any property I always adhere to facts, according to the best of my knowledge, neither knowingly exaggerating or diminishing the value of the property by misrepresentation. I find that this property and that of New Great Wheal Vor belong to three gentlemen, who have recently taken a lease of additional ground on the course of the lodes in Great East Vor. They are satisfied that they have a good property in each mine, and are indifferent as to what opinion other parties may entertain regarding it. They are not asking for any co-adventurers. They have lately taken Binner Downs stamps, and made additions to the appliances for returning the tin, and in a short time 2 or 3 tons will be sent to the smelting house. I have also to-day been at New Great Wheal Vor, and find that the lode 13 fms. from surface is 4 ft. wide, yielding rich tinstone. R. SYMONS.

Truro, May 25.

THE NEW MINERAL DISTRICT OF NORTH WALES.

SIR,—My attention having been drawn to the recent correspondence on this subject, and my opinion solicited as to the reality of gold-producing quartz, I may say that I personally collected some samples from the outcrop of a vein chosen hap-hazard, these samples, containing no visible gold. I sent to a firm in London requesting them to have them assayed by Messrs. Johnson, Matthey, and Co. The result, I need not tell you, was far beyond my expectation, for their certificate gave—Gold, 7·575 ozs., and silver 1·850 ozs. per ton of 20 cwts. of quartz; yet I should advise those interested to have crushed not less than 20 tons of quartz direct from the vein, and assay taken from the bulk before forming an opinion.

Dolgelley, May 24. C. J. ARNOLD.

BELL VEAN MINE.

SIR,—The trial of machinery referred to in last week's Journal by Mr. Stephen Young as having been so unsatisfactory to him, was precipitated by Mr. Young and his father, who is a director of the company, for their own purposes. We were not quite ready to make the trial, and it was conducted with the same animus so apparent in the letter. The results were nothing first-class, but sufficient was done to show to those who understood the machinery that it would do the work for which it was designed. On the following Saturday, when arrangements were matured, a very careful trial was made in the presence of another director and other gentlemen, when the very hardest tinstone was treated successfully, and samples of the produce can be seen at the office of the company. As this was probably Mr. Stephen Young's first visit to a metalliferous mine, his short letter illustrates the danger to which public companies are exposed, and how potent a man can be to work evil who is impotent to do good.

Carlisle, May 24. DAVID BURN.

PUMPS.—The invention of Messrs. HOSKING and BLACKWELL, of Dalton in Furness, consists in working sliding pipes with nozzles and pistons. It having been usual heretofore to employ a rod or rods for working the plunger when the greater the height of water to be raised the greater the power required. They use two sliding pipes in two cases with stuffing boxes attached. These sliding pipes are attached to a nozzle. The pump pipes are fixed to the top slide pipe case and supported by iron or wood girders from the bottom. The nozzle has four branches; two are attached to the bottom and top sliding pipes, and to the two other branches are attached two floating pistons. These pistons bear the pressure of water that is in the column over the valve or cock. Now we utilise this pressure with these floating pistons rising and falling with the slide pipes. To the top piston rods are attached, connected with the bob end at surface hanging on a pin with a slot so as not to bind the underpart of the pin; the slot is used to allow the rods to rise when the pressure of water on piston is greater than the weight of the rods, and make the rods swim on the water. These pistons are fixed in short endless cylinders having a hollow guard at the end to keep the pistons from coming too far. The bottom piston has two outside ropes or rods connected at top with the bob end. The pressure of water is always acting on this piston, trying to push it down; the weight of water is always here. This weight of water is balanced with weight in the balance box at the end ef the bob.

REPORT FROM CORNWALL.

May 25.—Another week has passed by and left us just where we were, with no material change for the better—save the certainty that we are so many days nearer the improvement that everybody knows must come—but certainly with no change for the worse. And that appears to be all that the most far-sighted and best-informed of local authorities on the tin prospects is able to suggest or to say. To multiply words under such circumstances is only to waste them; and we will only add, as just the one crumb of comfort to be gained out of this speculator's depression, that it seems to have put a stop, at least for a while, to the undue multiplication of mines—undue, because quite half of the tin mines started in the last twelve months were doomed to early extinction from their infancy, and a large proportion never even had a chance.

We have already pointed out the advantages which the country is certain to gain, in the development of its mineral resources, from the railway extensions into North and East Cornwall recently authorised. The gain comes none too soon for these localities, and we wish we could see more progress of the same sort made elsewhere. Traction engines have been brought into play lately in the vicinity of St. Austell with good effect, and have been made the theme of an amount of short-sighted grumbling which, in the present day, seems little less than marvellous.

It is stated, and apparently upon good authority, that the Perran Foundry is likely to be reorganised and revived upon an extensive scale. There ought to be room in the county for a good business here, as of old.

It is very seldom that disputes, arising out of the actual working of mines, come under the notice of the law; but there was a curious one the other day at Redruth County Court, in which a pare of men sued Mr. Bawden, of South Frances, for 10*l.* 6s., alleging that they had never seen or heard the mine rules, and that they had been unable to complete their bargain on account of the bad ventilation. For the former point the management certainly could not be held responsible, as it appeared that the men who gave evidence could not read—young fellows though they were. On the latter head Capt. Craze had the most complete answer of denial; and a balance due for actual work done of 6*l.* 4s. 10d. being admitted, judgment was given for 6*l.* 10s. The point raised might, in some cases, have been an awkward one, but the result will hardly encourage similar attempts.

TRADE OF THE TYNE AND WEAR.

May 24.—The Steam Coal Trade is rather quiet, mainly owing to the dearth of foreign sailing vessels, which it is supposed have been detained by contrary winds; the shipments of coal and coke have, however, been large on these rivers during the past week. The market for coal in Egypt attracts much attention, and the trade with that important district is gradually increasing. Several vessels are now loading steam coal for Alexandria. The gas coal trade continues good, as there is a good supply of steamers. There is a little improvement in the shipping demand for house coal, but no permanent improvement can be expected in this branch of the trade until the autumn. The ironworkers strike having happily terminated a considerable impetus has been given to the demand for small and nut and all kinds of manufacturing coal, and the trade at Durham Collieries has improved in consequence. The underground deputies at the Durham Collieries have applied to the coalmasters for an advance of wages, and the masters have made them an offer of an advance of 3d. per day. The demand for coke is very strong, and, consequently, the value of this important article of commerce continues to improve. There is not only a good demand for inland consumption in Durham, Cleveland, and Cumberland, but for export also. A cargo of patent fuel manufactured from small coal has this week been shipped on the Wear; there is an excellent demand for this article abroad, and it is surprising that this manufacture has not been more cultivated in this district; the supply of small coal, which can be had at a cheap rate, is ample, and there is no doubt whatever that the business is fairly profitable. The new coal winning at Marsden, near South Shields, continues to be developed rapidly, and coal will be worked here on a large scale at no distant date. The limestone beds on the property of the company are now worked very extensively, the produce being sold at the chemical works in the district. A new colliery in a similar scale to the Marsden winning is also projected, and it is probable that the point fixed upon for this new work will be near the Benthouse, near South Shields. The experience gained at the Marsden winning respecting the quantity of water likely to be met with, &c., will, no doubt, be useful to the new company.

The Miners' Permanent Relief Fund has been called upon, through the recent explosions in this district, for heavy payments to the survivors, and an appeal has been made to the public and to the coalowners who do not contribute to the fund for support. This appeal has been responded to in some cases nobly, the Bishop of Durham has taken much interest in the matter, and a conference was held at Auckland Castle on Saturday, when the officials of the society and many influential gentlemen attended, having been invited by the Bishop. The state of the funds and the object of the society were discussed, and there is hope that the result will be that further support will be given to the fund. On the same day (Saturday) the members of the steam coal trade in Northumberland were conferring at a meeting in Newcastle on the same subject, and they appointed a committee to examine and report on the working of the fund. Some remarks were made at Auckland Castle as to the coalmasters who had withdrawn their support from the fund, and reasons for this were assigned at the Newcastle meeting as follows:—"We have no voice in the management of the fund; we consider the cost of management too high, since the owners undertook to pay 20 per cent. payments to aged members have been added; we have some doubt as to whether the two sections of the fund are kept apart; and, finally, we are now subjected to actions at law from the friends of men injured under the provisions of the Employers' Liability Act." It is hoped that the support of the Bishop of Durham and the gentlemen who attended his conference, and the appointment of a committee by the coalowners, will lead to the two parties coming together in amicable conference on the situation of affairs.

The iron trade has been steady this week, and generally speaking its position has certainly improved. No doubt the unfortunate failure at Stockton has had a bad effect, which for the time being tended to lessen confidence, especially as many local firms were to a certain extent involved. It is not, however, looking at the amounts involved, likely to lead to further serious complications. This case has led to many comments on the character of a legal system which enables mortgagees to keep up increased liabilities year after year, and thus sweep everything off, as is expected to be done in this case. It appears to be only reasonable that mortgages should be registered, so that the ordinary creditor would be placed in such a position as to know where he really is, and not be liable to be deprived of his equitable rights. Manufacturers have no reason to be anxious about the future, they have a fair extent of work in hand; and, as it appears to be quite certain that iron shipbuilders have orders which will keep them during the whole year, and well into the next, prices are both steady and firm. There is no change of consequence in the price of manufactured iron. Ship-plates remain at the price they have so long held—7*l.* 5s. per ton. Pig-iron, No. 3, is 43s. 3d. The stock of Messrs. Connal is now 138,063 tons, a reduction on the week of 3860 tons. This is a sufficient indication of the healthy state of the trade.

UNDERGROUND LOCOMOTIVES.—The haulage of coal in coal mines has engaged the attention of mining engineers from the earliest period of coal mining enterprise. When the levels were es-

tended far from the shafts in early times horses were employed to drag the coal along the levels, but when the mechanical engineer had succeeded in producing suitable engines for the purpose those engines were employed to haul the coal by tail ropes, endless ropes, and endless chains, and the late Mr. Nicholas Wood laid it down as a rule that if an engine could be employed so as to dispense with five horses such engine would pay. Excellent as these means of underground haulage are they are open to many objections, the main one, perhaps, being that a great proportion of the steam power employed is absorbed in dragging the ropes; the system, in fact, though vastly superior to horse power, is wasteful and expensive. To remedy this various attempts have been made during the past twenty years to produce a locomotive engine worked by steam power suitable for employment on underground roads, but hitherto all these attempts have failed, owing to the injurious effects produced on the roof and ventilation by the steam and smoke, &c., produced. But now that compressed air has been introduced for working underground engines the way appears to be paved for the introduction of underground locomotives. Powerful engines are employed on the surface, and the air is compressed up to a high point and stored in tanks, from whence it is conveyed down the shafts and to any required point in the mine by means of pipes. Where hauling or pumping engines are worked it is, therefore, only necessary to transfer this power to a suitable locomotives to be worked in the levels, &c. This has already been accomplished to a certain extent at the Lambton Collieries, in the Wear, by Messrs. Leshman and Young, who secured a patent some time ago for a small locomotive, and they have worked several of these engines at those collieries for a considerable time with marked success. A number of similar engines are now in course of construction at the Grange Ironworks, near Durham, under the direction of Mr. Lawrence, the engineer and manager of these works. These engines have been ordered for collieries in South Wales.

In the lead trade there is much uneasiness at present, owing to the fact that the Spanish-French treaty comes into operation shortly. Hitherto Spain has levied the same duty upon lead for France and lead for Britain, but she has now reduced that to the former country largely, while there is no change of the duty to Britain; this movement is supposed to be a protest against the duty we levy on Spanish wines, which exceeds the duty levied on French and other wines. If these differing dues remain it is feared that our import trade in lead from Spain will be ruined and that it will fall into the hands of the French. It is probable that the subject will be brought before Sir Charles Dilke by the local trade in this district.

TRADE IN SOUTH WALES.

May 25.—The steam coal trade of this district still maintains its activity. The shipments during the last week amounted to 114,930 tons foreign at Cardiff, and 17,810 coastwise; Newport, 26,920 tons foreign, and 15,239 tons coastwise; Swansea, 16,352 tons foreign, and 9917 coastwise. The holidays next week will interfere to some extent with the output, but the low wages at present ruling will prevent the colliers from indulging to any great extent, as in the palmy days of 1873-4. The patent fuel trade is healthy. Swansea has sent away 7220 tons, and Cardiff 5132 tons. Of pitwood there have been 3763 tons received at Cardiff, and about 25 cargoes at Newport.

The iron trade in Monmouthshire is not so healthy as it has been. Newport has exported 2220 tons to New York, 1237 tons to Montreal, 1121 tons to Santos, 1100 tons to Fiume, 780 tons to Stockholm, 632 tons to Maceio, 580 tons to Rotterdam, and 100 tons to Palermo. The exports from Cardiff have amounted to 1678 tons. Iron ore has arrived at Cardiff to the extent of 11,469 tons from Bilbao and other places, and prices may be quoted at 16s. per ton. Although the Cyfarthfa Works Bill has passed the House of Lords it is not expected that a start will be made until next month, as the principals are away on the Continent. The Tredegar Ironworks will commence the make of steel next month. These works now rival the best in the Principality for completeness, having every modern appliance.

The tin-plate trade has shown signs of improvement at Llanelly, and a rise of 6d. to 9d. per box has taken place at Liverpool. Another failure is announced since last report, and it is expected that others will follow. There are now 20 works idle, whilst others are only partly employed. The large manufacturers by their action will probably drive the smaller ones out of the market, and the trade will then remain in a few hands. Some of the small employers have been in the habit of placing the best brands upon inferior goods, and thus ruining the good name of South Wales in the United States.

The Taff Vale ordinary stock was quoted at 300 on the Bristol Exchange last week, a rise of 14 per cent. in a few days. This is supposed to be in consequence of the proposed amalgamation of that line with the Rhymney Company. A new company has been started called the Milford Haven Railway and Estate Company, with a capital of 350,000*l.* to open up the Milford estate, and other purposes. The Rhondda and Swansea Bay Railway, projected for the purpose of making the route between the great steam coal valley and Swansea shorter by means of a tunnel, has passed the House of Lords, and has gone down to the House of Commons for second reading.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

May 25.—The colliers strike in North Wales continues, and the distress prevalent is very great. The strike seems, however, to have entered upon its last desperate stage, and it is reported that at two collieries—Plas Power and Cae Penty—the men have gone in at the reduced rate of wages. The flame of discontent is kept alive by a "representative" from Lancashire, whose qualifications to speak on such matters may be judged by his statements that coal should be raised at a maximum cost of 4s. per ton, and that at this price colliers should earn 7s. per day and labourers 4s. 6d. If the men of Lancashire he is supposed to represent are earning these wages why do they not send some relief over? A tract, even if it be a colliery speech, brings little comfort without some more substantial help. However this strike may end an injury will have been done to the North Wales home coal trade by it which, if not irreparable, it will take years to recover from. Coal from Staffordshire and Lancashire, where the seams are thicker, is being poured into the district, and finding favour with the people. In the meantime the ironworks, the brick and tile works, and other industries in which a large number of men are usually employed are being closed.

The coming tax upon slates imported into Germany has marvellously quickened the Festiniog portion of the North Wales coal trade. Portmadoc is very busy with the shipment of slates to the Baltic ports before the tax takes effect. It cannot be said that the Manttle, Llanberis, and Bangor slate trade is very brisk; owners find it difficult to sell. The Quarrymen's Union has just been holding its annual meeting, and although the speeches were temperate, and for the most part sensible, it is open to question whether in some things the Union is not acting unwisely. It does not, for example, consider that every slate quarryman it helps to emigrate becomes a competitor with the home trade. And is it not badly advised to put 1000*l.* of its 10,000*l.* reserve fund in quarry enterprise? It is notorious that co-operative societies of workmen in collieries, quarries, and most great enterprises, come to grief. It is one thing to raise slate blocks, and split and dress slates, and quite another to manage a great commercial undertaking; indeed, it is at this stage of the operations that a good many slate quarries, good in themselves, and begun under good auspices, have come to grief.

My Cardiganshire friends must not think that I have forgotten them, I shall look them up if they care for me to do so in a week or two. In the meantime I am glad to see by some columns of the Journal, and to infer from others, the continued progress and prosperity of several of the lead mines to which I have aforetime referred. If we had only higher prices we should all be in better feather. We go on hoping for better times.

The works of the Liverpool water scheme are extending, the first consignment of 3000 large pipes having just been delivered at Oswestry. What are the Manchester people doing with their Thirlmere scheme?

In Flintshire Great Holway Mine seems to be making good progress. The amalgamation of the Queen of the Mountain with the South Prince Patrick should be a good arrangement, and as both properties are in the thick of the lead-bearing limestones of Halkin Mountain some rich deposits of ore ought to be found. I hope they will. Great indignation is felt and expressed, and rightly so I think, in and about Wrexham at the rejection by the Lords Committee of considerable portions of the Wrexham, Mold, and Connah's Quay Railway Bill, and it is said that the Duke of Westminster is about to move in the House of Lords for its recommittal.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

May 25.—The scarcity of gas coke was again a matter of complaint on 'Change this week. Some vendors, unable to get supplies from their usual sources, reported that they had sought supplies from the Corporation of Bristol, but that the price delivered into this district was a good 6d. per ton too high to enable them to sell again at a profit. At the works in Bristol 5s. per ton was required, and to this some 7s. 8d. per ton would have to be added for carriage, making the price here 12s. 8d. per ton. The hope was expressed that the shortness of supply would soon right itself, but the continuation of the colliers' strike in North Wales was an unfavourable factor in the calculation. The coal trade was without change. Part-mine pigs of native production are showing rather more life, some recent sales being of 500 tons in a line. But it is the foreign brands that display most improvement. Northampton pigs were about 44s. to 45s. per ton. Native cinder-pigs were 40s. to 37s. 6d., with a little better enquiry. Hematites were dull of sale, buyers declining to give the 67s. 6d. asked by agents, and these latter in their turn refusing generally to accept the 65s. offered by consumers. The finished ironworks will next week, in consequence of the holidays, be only very partially occupied. Tin-plates were steady, but makers' prices were difficult to get. All the colliers employed at Messrs. W. Rigby and Co.'s Diglake Collieries, Audley, North Staffordshire, to the number of nearly 400, have struck work against a reduction of 5 per cent. in wages. The strikers have issued an appeal to the general public for support as the strike threatens to be a prolonged one, their reason for this step being that their funds are very low at the present time. The coal trade of the district generally is in a very unsettled state.

The puddlers, shinglers, and forge rollers who are agitating for an advance in wages, have now received the reply from the masters, which, as I last week reported, had been promised. The masters regretted "that it quite out of the question to concede the advances asked for." They stated that information from South Staffordshire convinced them that the North Staffordshire men were not at all underpaid. The men's secretary, commenting on the answer, said they were told that the shinglers and forge rollers had had an advance of 7½ per cent. This he admitted, but an advance of 5 per cent. now sought was necessary before wages were again what they were in 1878. In that year 12½ per cent. were swept off. He advised the men, however, to seek the masters' consent to refer the matter to arbitration. Much disappointment was felt at the masters' reply, and this was expressed in a resolution. The secretary's advice, however, was taken, and the masters were asked to submit the question to arbitration.

THE RE-OPENING OF THE BURLEY PIT.

A meeting of the members of the North Staffordshire Institute of Mining and Mechanical Engineers was held at Stoke-upon-Trent last week, the chair being taken by Mr. J. Lucas.

Mr. J. Strick read a paper on The Re-opening of the Burley Pit, Apedale, after the explosion in March, 1878. The paper was intended to show the dangers and difficulties of such an undertaking, and the way in which those dangers and difficulties were dealt with and finally overcome. Prominent amongst many other dangers was the large body of gas confined in the workings, the tapping of which required very great care owing to the great pressure under which it was confined. There was also the probability of smouldering fire being present in the workings, and the danger of its being fanned into a flame by the current of air which was used for the purpose of clearing the workings of the noxious gases. The health of the workmen was also greatly affected by the extreme heat of the workings, which materially hindered the progress of the re-opening. On the day of the explosion the height of the barometer was 29·3, the thermometer registering 36°. The downcast shaft is 13 ft. 6 in. in diameter, and 484 yards deep, passing through the 7 ft. Bambury seam, down to the 8 ft. Bambury. The seams dipped at an angle of about 40°. The upcast shaft, which is 25 yards distant from the other, is 10 ft. diameter, and 454 yards deep. On the day of the explosion, after several fruitless attempts to recover the bodies in the 8 feet seam, it was decided, through the advice of the Sub-Inspector of Mines, to fill the upcast with dirt to the 7 ft. mouthing. This was done, and after consultation on the second day, when another explosion occurred, it was decided to fill the downcast shaft with water above the level of the 8 ft. seam, thus effectually closing that seam. The smoke from the underground fire then ceased. The upcast shaft was filled up to the 7 feet inset, a distance of 39 yards. On May 14 operations for clearing out the upcast shaft commenced, three shifts of men being employed. The arrangements for ventilation were as follows:—A steam jet was put in the 13 ft. 6 in. shaft, which was made the upcast, a dip thirling was opened on the 7 ft. seam between the two shafts, and from that thirling seven rows of 9 in. air pipes were put on and kept as close to the dirt as possible. For the water supply, two pumping engines pumped water into two large cisterns placed on the pit bank. From these cisterns 1½-in. steam-pipes were laid down the shaft, tested to bear a pressure of 260 lbs. per square inch. A tap and overflow pipe were put in at 44 yards from the bottom of the shaft. In the crut to the 7 feet mouthing was a stopping and regulating door to regulate the quantity of air to keep the 7 ft. workings clear. Also at the 7 ft. mouthing at the dip thirling before mentioned there was one air pipe taken down to the 13 ft. 6 in. shaft, and brattice put from there down almost to the water, as there was a large quantity of gas being given off from the surface of the water. On the 16th the debris had been cleared out to a depth of 11 yards. 1 ft. Minute details of the re-opening operations were given in diary form, the shaft being cleared to the bottom on June 2, when several bodies were met with. The work was attended with difficulty every day owing to the great amount of gas and additional air pipes had to be used in the shaft as well as an additional steam jet in the 13 ft. 6 in. shaft. On the evening of May 31 it was reported that fire had been seen at the bottom of the shaft. The work of clearing out the dirt was suspended, and water was pumped down all night. At daylight the next morning it was found that the water which had been pumped down during the night had washed an opening through in the inset of the 8 ft. seam, and had thus liberated a large quantity of gas which had been confined in the workings. No signs of fire could be found, and the only reason that could be assigned for this light seen by the men was that it was caused by the phosphorous given off by the decomposition of the bodies which were afterwards found at the bottom of the shaft. On June 1, after the bottom had been reached and the dead bodies which were found there were brought up, seven elbow pipes were put in to carry the air into the workings. On the 10th coke was discovered in the north dip, and as the place was so hot pipes were carried up and water was discharged on the coke at full pressure. Air pipes were carried through the workings, and water pipes where it was thought there was danger of the coke re-igniting, or where there was danger of fire smouldering under the dirt, the dead bodies being removed as they were met with. The wearisome and dangerous work was continued (the roads being blocked up in some places by falls of roof) till July 5, when what was supposed to be the last body was found, and the top end of the workings was arrived at and all the gas cleared out of the 8 ft. seam. The ordinary ventilation was then restored, and the water was drawn from the downcast shaft. After an interval of nearly two years, to the surprise of everybody, another body was discovered at the top of the furnace dip, in a state extraordinarily free from decomposition, it having been buried in 3 feet of dust and dirt. The Chairman said a number of eminent engineers differed as to the best method of proceeding to re-open the pit; but the plan which was adopted proved successful, and if the explorers had not taken the precaution of having complete control over the ventilation another explosion might have occurred. Mr. J. R. Waine said reference had been made to the gas coming through the dirt. What kind of dirt and what depth of dirt did it come through?—Mr. Strick said it was the actual dirt which had come out of the pit in the process of sinking.—The Chairman said the gas was not perceived till a certain amount of dirt had been taken from the top.—Mr. Waine: It amounts to this—that 30 yards of dirt put down the pit would not make it air-tight.—The Chairman: No.—A vote of thanks to Mr. Strick for his paper was passed.

THE PRINCIPLES OF COLLIERY VENTILATION.

Whatever may be said or written as to the desirability of prohibiting the use of explosives and of naked lights, there can be no doubt that the careful study and application of the true principles of colliery ventilation is far more conducive than either to the prevention of unnecessary sacrifice of life amongst our colliers. To pretend that mining operations can, by any system of working within the reach of human practicability, be carried on without the occasional loss of life or limb is simply absurd, but happily the statistics periodically published in the *Mining Journal* show that since the introduction of official inspection such satisfactory progress has been made in the science of mining engineering that we are now enabled to raise a much larger tonnage of mineral for each life lost, and to reduce the number of deaths per annum amongst each 1000 men employed. That we have now reached perfection cannot be supposed, and it is only by the study of such works as that of Mr. ALAN BAGOT, the second and enlarged edition* of which has just been issued, that we can hope to continue to progress. There will probably be many of the opinions expressed by Mr. Bagot, to which exception will be taken by other engineers, but his facts appear to be throughly reliable, and of these he furnishes an abundance, whilst the lucid style in which he gives his explanations will make them readily intelligible to all to whom they are likely to be useful.

The points on which the management of collieries in this country are assailable are, in Mr. Bagot's opinion, insufficient precaution against blowers of gas, and absolute want of any appliances ready at hand in case of explosion. Mr. Bagot is of opinion that an Act will ultimately be passed to make the use of non-extinguishing lamps illegal; but it is obvious that quite as much might be said in opposition to such a measure as in its favour—it is already illegal to have workings in such a condition that lamps of that class are necessary unless for the firemen when going their rounds daily to ascertain the safety of the pit, and there are many who contend, and not without strong evidence and experience to support them, that where too much care is taken to provide against evils which should not exist, the anxiety to remove them is lessened. It is certainly not strict attention to safety lamps alone, to catches and detaching hooks alone, or to any other one special appliance that secures the general safety of a colliery, but the possession by the manager of extensive experience, combined with sound scientific knowledge and ability to apply them without hesitation to all parts of the workings. Mr. Bagot complains that with respect to the formation of life brigades in mining centres the Government has done absolutely nothing, but the great question is whether any Government interference in the matter is at all desirable. Will Mr. Bagot deny that after an explosion the rescue parties are not as much hindered by the obstructions caused by the explosions as by want of air? Is it not comparatively easy when the rescue party is getting near enough to be of any real use to the men in jeopardy to keep the air up as fast as the way can be cleared enough to pass through? Mr. Bagot remarks that after an explosion there is generally at least two hours to wait before anything can be done, and it would be found far cheaper and better to have one set of apparatus for the district kept in a central position ready for use than to trust to the individual resources of each colliery, and he adds that he maintains, in spite of what has been said to the contrary, that if the aërophores, such as, by preference, Fleuss's or Denayrouze's, were available with trained men in a mining district more lives could be saved at less risk to those whose duty compels them to make the attempt after explosion than at present when exploring parties are driven back time after time by choke-damp and after-damp, and valuable moments are lost and their lives needlessly endangered.

That it is most desirable that a Fleuss or Denayrouze apparatus should be within reach of every colliery need not be questioned, but so far as concerns exploring and rescuing from every way or working which can be walked through or to, there is an apparatus which can be made or obtained for 5s. or 6s. which might be kept at every colliery, and would be of great utility. This is the appapatus of Galibert. The patent, if ever one existed, has long since expired, and any dealer in india-rubber clothing would supply it in a few days. It consists merely of an air-tight bag of macintosh cloth—two fabrics with india-rubber between them—of the size of an ordinary bed pillow, provided with two pieces of webbing to permit of the bag being carried on the back of the shoulders, knapsack fashion. Two india-rubber tubes (¼-inch bore) are carried in to the upper end of the pillow, and form the only openings thereto. These tubes are of equal length outside (about 2 ft.), but on the inside one of them extends to near the bottom of the bag, the other enters only about an inch. The outside ends of the tubes are connected with a mouthpiece with a separate hole for each tube, and the apparatus is complete. To facilitate filling with air and carriage whilst full stop-cocks may be placed on the outside of the mouthpiece, and a third, or filling tube, of 4 in. or 5 in. in length, also furnished with a stop-cock, may be inserted in the top of the pillow, which can then be quickly filled with an ordinary kitchen bellows. The three stop-cocks will add 2s. 6d. to the cost, but still the whole apparatus could be supplied retail for about 10s. With such an apparatus the writer has walked about without inconvenience for 25 minutes in a closed room in which hay, sulphur, tar, and various other materials to make the atmosphere thoroughly deadly were burning. The complete dress consisted of a pair of goggles, made of two watch glasses fixed in leather, a penny American wooden letter clip fixed on the nose, and the air-proof knapsack. The tubes being brought over the shoulders the mouthpiece is held between the teeth and closes the lips; the breathing is then carried on through the mouth, the tongue being placed to close one tube whilst inspiring, and the other whilst respiring. It is preferable to inspire from the top of the bag, but it makes no great difference. It can scarcely be doubted that half-a-dozen of these might be provided at many collieries where the owners would not purchase a more costly apparatus, and if only brought into use when the wearer had got as far into the workings as he could breath the outside air they might save many lives.

In treating of the principles of ventilation, Mr. Bagot necessarily gives much information which will prove useful in the general arrangement of the colliery, for it must be acknowledged that if the ventilation be well attended to everything else must be kept in good order; he deals with the general principle of ventilation in collieries, the vacuum fan, the laws of chemical combination as applied to combustion, chemical interference with the main air current, instruments used in ventilation, general observations with respect to ventilation in practice, the Mines' Regulation Act, blowers of gas, accidents, meteorological phenomena affecting collieries and safety-lamps. The volume is in every respect worthy of study, and whether to those preparing for the examinations for certificates of competency, or to those of longer experience, it will prove highly valuable.

* The Principles of Colliery Ventilation. By ALAN BAGOT, A.M.I.C.E. M.I.M.E. Second Edition, greatly enlarged. London: Kegan Paul, Trench, and Co., Paternoster-square.

HORNCASTLE AND COMPANY, ADVERTISING AGENTS.—The receiver and trustee under the bankruptcy of Mr. W. R. Horncastle (whose failure it will be remembered was caused through bad debts incurred in advertising certain public companies which were subsequently proved to possess no property) has given notice that he has disposed of the goodwill of the business to Mr. J. Black. The business, which has been carried on for the past 10 years at Cheapside, and will be there continued, Mr. Horncastle, the founder and late proprietor acting as general manager.

Meetings of Public Companies.

WYNAAD DISTRICT GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the New Exchange Buildings, George-yard, on Tuesday,

Capt. UPTON in the chair.

Mr. TWYNAM (the secretary) read the notice convening the meeting, stating that the object of the meeting was to consider what steps should be taken in the interests of the shareholders, and if thought fit to pass a special resolution to wind-up the company voluntarily, and appoint liquidators.

The directors report states that at the general meeting in July last the shareholders were informed that the directors were then waiting for a document necessary to complete the title to the property, until the production of which they had refused to pay to the vendor any portion of the purchase-money. Such document was not, however, handed to the company until Sept. 8 when the deed of conveyance to the company was executed, and immediately afterwards forwarded to India to be registered. Mr. Punnett, who had been long resident in the district, had been appointed manager, Mr. Forsyth, a practical mining engineer of experience, had been engaged, and was on his way to India, and the necessary machinery had been conditionally arranged for. Before purchasing the machinery the directors awaited report from Mr. Forsyth. His report on the mine was altogether at variance with the reports and statements previously received. This was followed by letters of a similar character from him, while Mr. Punnett, the manager of the estate, wrote letters expressing his views as being directly opposed to Mr. Forsyth's. So conflicting were these statements that the directors were unable to act upon either with any degree of satisfaction or certainty, and it was, therefore, determined before purchasing and dispatching machinery, that one of the directors should proceed to India and personally inspect the property, and, if necessary, when there engage the services of an independent engineer of repute and experience in gold mines, to thoroughly examine and report upon the mine. Accordingly the late Chairman, Mr. Cowan, went out to India in November, and on arrival there, after himself visiting the estate, engaged Mr. Hamilton to make the necessary examination and report thereon. Mr. Hamilton met Mr. Forsyth and Mr. Punnett, and having made a preliminary examination of the property, gave Mr. Forsyth instructions as to the sinking of shafts and the driving of adits, the result of which would be to thoroughly prove the value and quality of the property as a gold-bearing mine. These works have been carried out by Mr. Forsyth under Mr. Hamilton's direction, and Mr. Hamilton has made his report on the results up to a recent date. This report is by no means satisfactory to the directors, who have, therefore, determined to lay the whole facts before the shareholders in general meeting. It appears that the action of the directors in thus bringing the state of affairs of the company before the shareholders does not meet with the approval of the promoters of the company, as the vendor and six of his nominees—all holders of vendor's shares—have delivered to the directors a formal requisition to convene a meeting for the purpose *(inter alia)* of removing the directors from their office. The directors, however, feel it to be their duty to call the shareholders together, and having laid before them all necessary information to give them an opportunity of deciding for themselves the course to be adopted.

The CHAIRMAN said that before formally entering upon the proceedings for which the meeting was convened, it was due to the memory of their late respected Chairman that some reference should be made to the loss which his colleagues and the company had sustained by his death. It was impossible to have a more genial, pleasant colleague on the board. He was a man of considerable commercial experience, and was well acquainted with the natives and the native language, and also had some acquaintance with the Wynaad district. If ever a man sacrificed his life in the interests of a body of shareholders it was their late Chairman—Mr. John Cowan. When Mr. Cowan agreed to go to India to look into affairs he literally signed his death warrant. Mr. Cowan was taken ill at Malta, and at Bombay he was taken worse, but he went up the district and stayed at Wynaad some time; he was afterwards taken on board ship on his voyage home, but he died soon after reaching home. Mr. Cowan's loss was greater than at first met the eye, because the object of his going to India was to report upon the state of the property, and draw up an exhaustive report, but his death prevented this being done. The Chairman said the circular which had been read conveyed a good deal of information, and the remarks which he had to offer would be to some extent a recapitulation of what was stated in the report. He would refer to the last paragraph first—namely, that about the action of the directors in bringing the company's affairs before the shareholders. He wished it to be thoroughly understood by them that before the directors received the notice from the promoters of the company, and his six nominees, the directors had determined to call the shareholders together and submit to them the state of affairs. But they were awaiting further information from Mr. Hamilton before submitting the state of affairs before the shareholders. It was not desirable to call the shareholders together before the directors had absolute facts to place before them. It would be more agreeable to the directors if they could tell the shareholders that they had met with triumphant success. He would remind the shareholders that Mr. Vazie Symons (upon whose report the subscriptions were invited) was present at the meeting in July, and from what Mr. Vazie Symons said the shareholders must have formed the impression, which the directors did, that they had one of the most valuable properties in India, and that they were justified in using every means they could to develope it. At that time Mr. Forsyth was on his way to India, and on arriving there commenced forwarding weekly reports, as also did Mr. Punnett, but the directors soon found that the weekly reports from Mr. Forsyth and Mr. Punnett conflicted with each other, and the directors determined to send out to the spot Two or three of the directors who had been in India were willing to place their services at the disposal of the company, but the choice fell upon Mr. Cowan. As he had said Mr. Cowan went out, and forwarded some letters, and appointed Mr. Hamilton as mining engineer; he had had 35 years' experience as a mining engineer, and he surveyed the property, and pointed out where new adits were to be driven. The reason for chosing Mr. Hamilton was this—that as Mr. Hamilton had not made a report upon any other property his opinion would be thoroughly impartial, and not biased, and therefore was the right man to choose. At times the directors thought the reports were encouraging, and spoke of the existence of gold, and the probability of finding gold in the strata, and reasons were assigned by him and others that although gold might not be found in large quantities, or in quantities at all on the surface, yet by going down in depth it might be found. He referred to a recent article in the *Mining Journal* in reference to St. John del Rey, where at one time it was thought that gold would not be found, and where even now it was not visible gold, and was never found until it had gone through crushing operations. The directors thought the plan of Mr. Hamilton for driving adits and sinking deeper was a wise one. As long as the directors were in want of the fullest information they (although they did not wish to keep the shareholders in suspense) awaited patiently the result of what was being done, but when Mr. Forsyth's report was received, and Mr. Hamilton confirmed it, showing that although there was gold on the property it was in such unappreciable quantities it was not worth working it, and the directors therefore determined that the shareholders should be called together, and instead of spending money upon lawyers and interested people they should decide whether they would voluntarily wind up the company, or have it further inspected. The directors were strongly of opinion that it would be to the interests of the company that it should be liquidated voluntarily. Mr. Hamilton had an interview with the directors that morning, and the facts he presented to them were sufficient to satisfy them that, although there was gold, it would not pay to work it. He suggested that the following resolution should be passed;—"That the Wynaad District Gold Mining Company (Limited) be wound up voluntarily under the provisions of the Acts from 1862 to 1880."

Mr. TWYNAM (the secretary) then read the report of Mr. Hamilton, and also two or three letters from Mr. Forsyth, all of which went to show that Mr. Vazie Symons had misled the directors as to the value of the property.

Mr. MANSELL asked by whom Mr. Vazie Symons had been instructed to make the report?——The CHAIRMAN said that the report of Mr. Vazie Symons was furished by the vendors to the company. Mr. Vazie Symons was a man of some repute, and it was assumed by the directors and shareholders that the report was a reliable one, and this report Mr. Vazie Symons himself corroborated at the last meeting. Mr. Vazie Symons had been invited to attend to-day, but was not present.

Mr. W. J. ROPER said there was no doubt that Mr. Vazie Symons' reports were grossly incorrect.

Mr. Romsell was about to address the meeting, when—

The CHAIRMAN said Mr. Romsell had subscribed for 1000 shares, but had never paid a shilling upon them. He asked the shareholders whether, under those circumstances, they would hear Mr. Romsell?——The meeting decided not to hear Mr. Romsell.

Mr. ROPER asked whether the coffee and cinchona cultivation was still being carried on on the estate?——The CHAIRMAN said the directors had written to Mr. Forsyth on the subject, and he had secured the services of a very good manager. They expected 9 tons of coffee from the estate. The directors had directed the extension of the coffee and cinchona cultivation if it seemed likely to be profitable. They only paid the manager 120*l.* a year.

Mr. ROPER asked whether 15,000*l.* had been paid to the vendors?——The CHAIRMAN said 12,000*l.* had been paid in cash, and also the stipulated number of shares. There was still due to the vendors some 3000*l.* in cash, which the company were bound to pay. There was nothing on the part of the vendors to neutralise the duty of the company to pay the amount.

A SHAREHOLDER said the property was bought on the false representations of the agents of the vendors, and he therefore thought the vendors ought to be to some extent liable for a return of some of the money which had been paid to them.

Mr. ROPER: Have you any claim for misrepresentation?——The CHAIRMAN: We do not think you have. We have taken counsel's opinion, and there seems to be no wilful misrepresentation which would render the vendors liable to the company; gold does exist.

The SECRETARY, in reply to Mr. ROPER, said the number of shares allotted (including vendor's shares 25,000) was 50,975. The vendor had been paid 12,000*l.* out of the 15,000*l.* cash due to him. There were 7000 under-written shares not paid for, 1000 of which the company might never be able to recover upon. There also remained the calls unpaid, about 2000*l.*, and there was between 1200*l.* and 1300*l.* at the bankers. There had been some expense incurred in India, and also for stamps, &c., in this country.

Mr. ARCHIBALD J. SMYTH said he thought the shareholders should take concerted action in the matter. He spoke as one of the largest shareholders. A petition had been put on the file to wind up the company. He thought they should abandon the working for gold, but they had still a very valuable property for coffee and cinchona cultivation. He did not see that there was any good to be derived from spending money in seeking redress from the vendors. The best thing would be to have a voluntary winding up and appoint an independent liquidator—a man in whom they could trust. (Hear, hear.) A petition had been put on the file by a firm of solicitors to wind it up compulsorily, in order that they might get their own liquidator appointed, and get the control, and thus the shareholders would be controlled instead of controlling. The petition was presented by a firm of solicitors, Beall and Co., on the part of a Mr. James Robinson, who was formerly a private client of his (Mr. Smyth), and whose signature to the affidavit was obtained in a peculiar manner. When the facts were made known the matter was withdrawn from the hands of Beall and placed in the hands of Messrs. Lawrence, Plews, and Baker, one of the most respectable firms of solicitors in the City of London, who would look after it in the interest of the shareholders generally. He suggested that Mr. James Waddell should be appointed liquidator.

Mr. MANSELL suggested the name of Mr. Fred B. Smart, as liquidator.

The CHAIRMAN said it would be much wiser to wind-up voluntarily, rather than allow the company to be wound-up compulsorily by interested parties. They had a good coffee plantation, and perhaps some speculator might also be found who might be disposed to enter upon it as a mineral speculation.

Mr. ROPER, speaking as a practical coffee planter of some years' standing in the Wynaad, said it would not answer the purpose of the company to endeavour to carry it on as a coffee and cinchona plantation, and the best thing would be to sell the estate, and get what they could for it.

The CHAIRMAN then formally moved that the company be wound up voluntarily.——Gen. H. N. HODGSON seconded the motion, which was put to the meeting and carried unanimously.

In reply to an observation that a claim should be made on the vendors, Mr. W. P. BAKER (solicitor) said that they could better approach that subject when the company was in liquidation. He said that those whom he represented were determined to take concerted action to save all they could for the shareholders. (Hear, hear.)

After some discussion it was decided to appoint Mr. James Waddell as liquidator, and to associate with him as joint liquidator, Mr. Twynam, the secretary, who, from his knowledge of the company's affairs will be able to render much assistance in that capacity.

Mr. TWYNAM, in acknowledging the appointment, said that the directors, in all they had done, had been actuated by the single desire to do all they could to protect the interests of the shareholders, and had worked hard with that object in view.

On the motion of Mr. ROPER, a cordial vote of thanks was passed to the Chairman and directors, and several of the shareholders expressed the opinion that the board had acted in a most straightforward and praiseworthy manner in calling the shareholders together, and placing before them the fullest particulars, and thus avoiding further loss.——The meeting then broke up.

RARA FORTUNA SILVER MINING COMPANY.

The first annual general meeting of shareholders was held at the offices of the company, Austin Friars, on Saturday, May 20,

Mr. J. P. BOYD in the chair.

Mr. J. VINCENT BARBER (the secretary) read the notice calling the meeting. The report and accounts were taken as read.

The CHAIRMAN said—Gentlemen, I will add that since the report was in the printer's hands we have received another letter from the manager at the mines, and if you will allow me I will read a few extracts from that letter. I say "extracts," because the reading of the letter *in extenso* would be useless to you, because it is chiefly composed of remarks upon machinery, and details which we have to attend to in sending in supplies. Under date of March 23 he writes—"Herewith I beg to hand you my report. I have sent a small box of samples from Third Febrero and San Carlos; the latter is from the bottom of the shaft, and when we obtain depth and develope this lode I have very little doubt about its becoming a rich mine." I regret very much to say that those samples are at Southampton, the vessel only having reached there yesterday, otherwise we should have been able to exhibit to you what they had sent. But any shareholder wishing to see them next week will find them here. Under date April 6 he writes—"I note that the general meeting is to be held in May, and I trust that my report will be in time for it, and that the San Carlos samples will assay well. I have great faith in this mine becoming rich." The San Carlos, you are aware, is a new mine which we have recently acquired. The letter goes on to say—"A good ore dresser, who will be constantly on the floors alone, we shall most certainly require, and I have already written you fully on this point. A good Welsh ore dresser is the man we want—a Cardiganshire man if possible, as I have already explained they can treat this ore better than any other men, and a week or a fortnight at the Van would teach them the use of the new Lewing machine, my knowledge of the working of which is but imperfect." I may tell you, gentlemen, that the important appointment of ore dresser is in course of being made, and we have a man in hand who will go previously to the Van Mine, and get instructions in the mode of treating the ore, which is an important feature in our works. The letter goes on:—"Machinery for San Carlos: I am very glad to hear that this machinery will come forward, as I can assure you that this lode is well worthy of money being expended on it, and it would not surprise me to find it turn out richer than Rara Fortuna. It is quite close, and our dressing machinery in Rara Fortuna can deal with the ore stuff at no additional cost for dressing machinery to the company." At the same time, whilst reading this letter to you, you will find that we have a later date before us by telegram—the two telegrams at the foot of the manager's report; the first received is April 4:—"Pumps and winding machinery in full working operation, and development of mine progressing very satisfactorily at all points." The second telegram, received April 35, is as follows:—"Mine looking well. Have cut a new branch of ore in shallow level south, carrying on average 200 ozs. of silver to the ton." These two telegrams, as I have said, are more recent than the two letters from which I have read extracts, and is the last communication of importance. And it is of very great importance to know that the pumps and winding machinery are in full working order.

Mr. F. PARISH: Which mine does the last telegram refer to?——The CHAIRMAN: To the Rara Fortuna—the only one which is opened. Gentlemen, in proposing that you adopt the report which you have before you, and having heard what I have just read, I really have but little to add; but to explain that the whole of our operations since we had the pleasure of meeting you before, have been, as is natural in such enterprises, purely of a preparatory character. Of course, the real work which has caused us great anxiety to get it completed, was the difficulty of getting the machinery forwarded from this country to the great distance at which this property lies. The heavy weight and peculiar nature of the machinery which we have had to send out, have embarassed us to a certain degree; but you will see that they have at length arrived on the mine, and are in working order; and although we are better placed than some mines, which cannot reach the mines with the machinery, still we have great difficulties to overcome in getting there. We have 8000 miles of sea, and we have to tranship the machinery on to a railway, which conveys it 250 miles, and when it has reached the city of Cordoba it has to be transhipped to another railway. Unfortunately the Argentine Government altered the gauge of the line, and we have to tranship the machinery. From Cordoba the railway transports the machinery to Dean Funes, and then comes the really sad way of 60 miles, through a country almost without a road, and which is very difficult to traverse with cumbrous machinery, but Mr. Maxwell has overcome that.——Mr. F. PARISH said there was an old road which was traversed by carts and vehicles of different kinds.

The CHAIRMAN: Yes, I do not mean to convey the idea there is no road, but when the prevailing rains come down for weeks afterwards you can scarcely pass. I do not mean to say that we have such difficulties as the Indian mines in the ghauts, or the difficulties they have in the Andine Mines. I do not wish to convey the idea that the road is impracticable, but I merely point out that we have had difficulties to contend with, and we have great reason to congratulate ourselves on the success we have attained. (Hear, hear.)

Mr. PARISH: One of the good features in connection with the mine is that it is within easy distance of the railway and port of shipment (Hear, hear.)

The CHAIRMAN: Upon that point I have to add an important fact, which, I hope, will be carried into execution shortly. The Government there, happily for us, is smitten with the mania for spreading railways all over the country, and they propose to send a railway from Dean Funes to within a very small distance of our mine—in fact, the surveys have been made for the line, and, if carried out, will greatly add to the value of our property. (Hear, hear.) You will see we have nothing to report of actual tangible production from the mine; at the same time, the commercial position of the mine is in a most favourable position. As you know, you have received your dividend in accordance with the guarantee received from the vendors, and in every respect the vendors have faithfully kept the agreement they made with us in paying the preliminary expenses, and in doing everything in accordance with their engagement. And I congratulate you also upon the public estimation in which the enterprise is held, which you may see by looking at the price at which the shares stand in the market. When we started the enterprise we purchased the Rara Fortuna Mine. We have since acquired the Santiago, in compliance with the provision attached to the guarantee; and by the activity and intelligence of our manager, Mr. Maxwell, we have since acquired the Antonieta and San Carlos, which we have since denounced according to the custom of the country, and which has been since conveyed to the company. The report of Mr. Maxwell on these properties is most favourable, and we have every reason to believe that they will be as profitable as the original Rara Fortuna. (Hear, hear.) Speaking of the Rara Fortuna property and the quality of the ore derivable from it, I may mention that the vendors have received in Liverpool within the last few days a shipment of ore from the Rara Fortuna Mine, which was taken out previously to the sale to us, and it gives by assay 400 ozs. of silver to the ton. Reviewing the whole circumstances of the mine it is but in a preliminary stage, and we have every reason to take the most sanguine view of the future of the mine; and I trust that when we have the pleasure of meeting you here again we shall also have the pleasure of being able to inform you of a considerable amount of actual production of the very highest quality. (Cheers.) It is no use enlarging too much, but I have simply explained the hopes which you have to rest upon, and I am sure many of you acquainted with mining enterprise can understand that, so far as we can understand, we have achieved the only success we could achieve within the time and in the circumstances under which we have been placed. (Cheers.) I beg to propose the adoption of the report and accounts.

Mr. AUNGIER seconded the motion. He said that Mr. Maxwell had recently written to the directors asking permission to deal in ores by purchasing the mineral in the rough from small miners in his neighbourhood, which he could do on very favourable terms, and dressing it with his new machinery for market. He had sufficient hands and sufficient machinery to spare for this business, and out of the profits derived from it he expected to be able to pay the working expenses of the mine, and leave its produce net profit. He stated that the capital expenditure of the mines had come to an end for the present; some few articles of machinery would be further needed amounting to a cost of only a few hundred pounds, but Mr. Maxwell had stated in a recent letter that he would not ask for these things until he had shipped us our first 100 tons of ore, which he hoped to do very shortly. When the dressing-floor was in full operation Mr. Maxwell estimated that he would turn out 3 tons of cleaned up ore ready for export per day as the normal output; and to make up for lost time he would work the floor for some time both day and night, he taking the superintendence during the day, and his side-de-camp, Captain Teague, of whom he spoke very highly, performing this duty at night. He had sent us samples of blende from the San Carlos Mine with a request that we should have it dressed in England, and submitted to smelters here to ascertain what price could be got for lots of 50 tons. This matter is now in hand, and we shall be able to publish the result very shortly. The shipments of ore would begin almost immediately, and from this time forth we may consider ourselves well afloat.

Mr. SUTHERLAND considered the report was very satisfactory, but he thought it would be all the more satisfactory if the manager confined himself as much as possible to the mine now in hand. They had a good mine in Rara Fortuna, and he thought the manager had better confine himself to that, and not go scratching all over the country. He should like to see the names of the directors attached to the report.

The CHAIRMAN said the directors had never lost sight of this point. Mr. Maxwell was not a man of a discursive turn of mind, and would not go "scratching" all over the country. What Mr. Maxwell had done was quite within the radius of his actual working.

Mr. SUTHERLAND said that the manager had added two mines.

Mr. STAPLES said these mines were immediately adjoining and on the run of the lode, and the shareholders would be wise to give Mr. Maxwell some latitude in that direction, and not restrict him too much provided he confined himself to the district, and paid only "bed-rock" prices for the property. (Hear.)

The resolution for the adoption of the report and accounts was then put and carried.——The CHAIRMAN, in reply to a question, said that 20*l.* or 30*l.* would cover the expense of "denouncing" the new properties.

Mr. STAPLES proposed a vote of thanks to the Chairman and directors and to the manager on the other side, and said the shareholders might implicitly trust to those gentlemen to do all that was necessary to carry on the mines to a successful issue.——The motion was seconded by Mr. SUTHERLAND, and carried.

The CHAIRMAN acknowledged the compliment, and expressed his pleasure that Mr. Maxwell had been included in the vote, for that gentleman had displayed very great ability in connection with the management of the company, and he might mention that Mr. Maxwell's remuneration depended very much upon the success of the mine. Mr. Maxwell's private letters were of the most encouraging character.——The meeting then broke up.

THE FAURE ELECTRIC ACCUMULATOR COMPANY.

The first ordinary general meeting of shareholders was held on Tuesday at the City Terminus Hotel,

Sir A. OTWAY, Bart., M.P., in the chair.

The CHAIRMAN said that the company had not been formed for speculative or gambling purposes, but for the very important purpose of introducing to the public an invention which he considered was one of the most remarkable of modern times, for the storage and distribution of electricity under the patents taken out in this country by M. Faure. At the time of forming the company they had to deal with an entirely novel invention, and they had guided themselves at first by the advice of Mr. Philippart, a gentleman who had had great experience, so far as experience could have been gained in the matter of accumulators. Mr. Philippart had recommended the company to arrange with an eminent firm at Liverpool for the supply of accumulators, suggesting afterwards that a construction company should be formed. The company had entered into arrangements of a tentative character with the Liverpool firm for the supply of a number of accumulators on terms which would give a fair profit to the company. Profs. Ayrton and Perry, the engineers of the company, had been down to the manufactory at Liverpool, and had reported that the work was now progressing rapidly, and in a very satisfactory manner, 200 large accumulators being now ready, and the company was now prepared to turn out 300 or even 1000 if necessary a week. One of the principal difficulties the company had had to contend with had been the number of mysterious statements in the press and elsewhere as to the advent of another accumulator, which was to entirely surpass the Faure accumulator. The company had taken steps to protect themselves, and had retained the services of Sir W. Thomson, who was of opinion that the new accumulator was an infringement of their patents. It that was the case it proved all the more that the accumulator was a necessity for all the electric light companies. They had but one thing to be careful of, and that was to do nothing themselves to damage their own prospects. They had already made an arrangement with the Grand Hotel, where their accumulators would soon be at work, and an agreement would shortly be signed with the manager of a conspicuous theatre. They had also already lighted by means of their accumulators the Pullman train on the Brighton line. In conclusion, the Chairman expressed the utmost confidence in the prosperous future of the company, half the capital of which had already been subscribed.

THE ADAMANT DIAMOND MINING COMPANY.

The annual general meeting of the shareholders of this company was held at the offices, Holborn Viaduct, on Monday,

Mr. CHARLES J. POSNO in the chair.

Mr. ANDREW MOIR (the secretary) read the notice convening the meeting.

The report, which was taken as read, states that the directors have pleasure in submitting to the shareholders the first balance-sheet and profit and loss account, made up and audited to Feb. 28, 1882, showing a net profit of 8856*l.* 1s. 2d., after making ample provision for depreciation and maintenance of plant and machinery, and writing off the whole of the preliminary expenses incurred in the formation of the company. Of the above amount 3200*l.* has already been distributed among the shareholders as an interim dividend, and the directors now recommend that 4800*l.* be appropriated to the payment of a dividend at the rate of 12 per cent. per annum for the six months ending Feb. 28, 1882, free of income-tax, making in all a distribution of 10 per cent. for the whole year, and leaving the sum of 511*l.* 11s. 2d. to be carried forward to the credit of new account. The directors refer with satisfaction to the result of the operations of the company during the past year, notwithstanding the unavoidable delays and difficulties they have had to contend with—the laying down of a tramway, the erection of new machinery, the scarcity of labour, and the delay in obtaining depositing sites. The tramway is now completed, the machinery in operation, the supply of labour abundant, and since the close of the financial year the company has had the full benefit of the depositing sites. In November last an unusually severe storm did much havoc to the company's property in destroying the Kaffir barracks and the store, but the damage was promptly repaired, and the cost has been defrayed out of revenue. That greater loss was not incurred was due largely to the co-operation of the company's servants and the energy of the manager, Mr. Wollaston. The above drawbacks having been overcome, most of which are not likely to recur, the directors fully anticipate that the current year will show still better results, especially as, according to the report of the manager, the ground is improving in richness with increasing depth. The plant and machinery are reported to be in good order. In accordance with article No. 85 of the Articles of Association, Mr. James Leverson and Mr. Harry Mosenthal retire from the board, but being eligible offer themselves for election. It will be the duty of the shareholders, in conformity with article No. 125 of the Articles of Association, to elect at this meeting an auditor for the ensuing year. The board have much pleasure in recommending the election of the present auditor, Mr. John G. Griffiths.

The CHAIRMAN: Gentlemen, in reviewing the figures of the past year, I think we have every reason to congratulate ourselves with the results we have obtained. The accounts before us show that after defraying all the expenses incidental to the formation of the company, and writing off 1176*l.* for depreciation of plant and machinery, we have earned a net profit of 8856*l.*, or over 11 per cent., out of which it is proposed to pay 10 per cent. to the shareholders. We must bear in mind, however, that this is the first year of our existence, and that having paid a dividend of 4 per cent. for the first six months, we can now declare 6 per cent. for the second half-year. Our manager states that but for a great number of occurrences during the past year which interfered with the regular working the results would have been very much better. I think I cannot do better than give you his own words. He writes on March 8, and says:—"In submitting to you my report of the company's operations during the past year ending Feb. 28, 1882, I have to state that owing to the many and serious difficulties the company has had to contend with during the year the working has been greatly impeded, and our success would have been much greater if we had not had so many drawbacks. In the first half-year, owing to continued rains and the great scarcity of native labour, caused by wars in the adjoining territories, the work was carried on under great difficulties. In the latter half of the year the difficulties although minimised, had not altogether been got rid of. The rate of wages has been excessive, partly owing to the short supply of native labour, and partly to the want of combined action on the part of claim-holders to reduce the current rates. Another great difficulty we have all along had to contend with was the great delay in the allotment of the depositing sites, on which the blue ground has to be spread out and exposed to the action of the weather, in order to get it into a properly pulverised state for washing. The want of depositing sites during the past year has caused us great inconvenience and loss, as, having only several small floors, we were obliged, to keep the concern going, to wash the ground very often when it is is not in a very pulverised state; and I need only mention that all the diamond are not won unless the blue is properly treated. The high price of fuel during the last year has also caused a greater outlay than if prices had been at their normal rate, but as our neighbouring coal mines get developed we can expect to get fuel at lower rates, which will make a sensible decrease in our expenses. Your directors can with confidence look forward to a much more profitable year, as we have now all our machinery and plant in perfect working order, the tramway to the depositing floors also being completed, and we have now some 11,800 loads of blue ground on the floor at the end of last month. This in itself is a valuable asset, and represents a large outlay of money. Our new washing gear, which has been erected within the last month, is capable of washing 450 loads per diem, so that we can expect larger finds, and with very little increase to our expenses. Should nothing unforeseen occur to prevent us from working, I think we will show a very good statement at the end of the half-year. The plant and machinery, being all new, is in thorough good order. The old washing-plant which we have no further use for we shall sell as soon as possible." This letter was dated Morch 8, and on the 22nd of that month he writes: "I feel sure that the ground we are now hauling will yield much better than that we have been washing for some time past." That is an important factor in our success. Our ground has yielded on an average 3s. per load, and every increase of 1s. means an increase of 10 per cent. And here it may be remembered that claims in the Kimberley Mine—which is at the present time four times as deep as ours—at the time it was no deeper than we are at the present moment yielded 10s. the load, and these are now producing at the lower level soil worth 2*l.* and 3*l.* the load. (Applause.) Diamond mining at the present time is very little understood. It is really in its infancy, and, indeed, we who know something about it have still very much to learn ourselves. But if we stop for a moment to reflect on a favourite industry, gold mining, you will remember that in gold mining it is necessary to have organisation, careful supervision, skilled labour, native labour, and machinery: that all the expenses of production are the same, or almost identical; that they require and consume coal, and that they want, in fact, everything we require, and that gold mines are not any nearer, but are rather farther away than the Cape; yet an ounce of gold is worth 3*l.* and an ounce of diamonds 300*l.* I think, therefore, you may fairly assume that diamond mining is at the present moment not well understood, nor properly developed. Moreover, in dealing with gold mines a gold bearing reef has to be followed in all its capricious ramifications. It sometimes improves, but then, again, it is as often

lost entirely. In diamond mining all we have to do is to go straight down, and, therefore, I assume that we have a prospect such as no other mining industry has, and that it is really a question of honest and fairly intelligent management. (Applause.) I shall be happy to answer any question with reference to the accounts that may occur to any of the shareholders. I believe we have stated all the particulars that you could desire to know, but if any of the shareholders wish to put any questions I shall be happy to answer them to the best of my ability. The Chairman concluded by moving the adoption of the report and accounts. (Applause.)

Mr. ANTON DUNKELSBUHLER seconded the resolution.

Mr. FORSTER asked if the directors thought they would be able to keep up the number of 400 loads during the current year?——The CHAIRMAN replied that Mr. Heckrath in his report put it at 450 loads per day.

Mr. ADOLPHUS COHEN remarked that up to the present they had not had the benefit of the new machinery, so that any benefits they had to derive from that had yet to come. (Hear, hear.)

Mr. DUNKELSBUHLER said that the quantity turned out was in March 10,300 loads, producing 2203 carats of the value of 4000*l.* For the first week of April the produce was 2401 loads.

The resolution was then put to the meeting and carried unanimously.

The CHAIRMAN proposed the re-election of the retiring directors, Messrs. James Leverson and Harry Mosenthal.——Mr. DANZIGER seconded the resolution, which was carried.

The auditor, John G. Griffiths, F.C.A., was also re-appointed.

Mr. HERBERT proposed a vote of thanks to the manager, Mr. Wollaston. The management had been all that could be desired, and when they knew how many similar concerns were ruined by bad management he thought they would be ready to support this vote of thanks.——The resolution was duly seconded and carried.

A cordial vote of thanks to the Chairman, directors, the secretary, and the Kimberley officers, closed the proceedings.

DEVON GREAT CONSOLS MINING COMPANY.

The ordinary general meeting of shareholders was held at the offices of the company, Austin Friars, on Thursday,

Mr. PETER WATSON (Chairman and managing director) presiding.

Mr. W. H. ALLEN (the secretary) read the notice convening the meeting. The report of the directors, and Capt. Isaac Richards' report and the statement of accounts were taken as read.

The CHAIRMAN said: Gentlemen, as you will see by the directors' report we have sold for the six months ending April 30 5800 tons 12 cwts. of copper ore, which realised 12,268*l.* 1s. 3d., or an average price of 2*l.* 2s. 3d. per ton. This, as compared with the previous half-year's account, shows an increase of 895 tons, and in money value of 3605*l.* There has also been an increase, as you will see, of 7s. 5d. per ton of the ore. The receipts for the sales of arsenic for the same period—the half-year ending April 30, 1882—have been 10,802*l.*, showing an increase on the previous half-year of 714*l.* 11s. 9d. You have already been informed that in January last the directors entered into a contract for the sale of our arsenic with very responsible people—no less so than the previous parties who had entered into a contract for nearly 30,000*l.* worth of arsenic, which contract was carried out well, and in fact most punctually; and we have no doubt but that this contract will be carried out in a similar way. This contract is for the 12 months' make of arsenic, amounting to about 25,000*l.* The expenditure has been very heavy, as you will see, amounting to 21,059*l.* 12s. 6d., in addition to which we have paid for a cargo of staves from Norway 530*l.* 13s. 3d. The costs are augmented by the vigorous prosecution which is going on in the development of very heavy work at the mines, such as sinking two shafts—Watson's shaft and the new shaft, which we have started westward on a very large tract of ground. Captain Richards will be able to tell you something with reference to that matter after I sit down. Such mines as these, as you are aware, must necessarily receive vigorous development. It is useless unless you do, and that is being done, both in sinking our shafts and driving our various ends in the hope of making some discoveries, and Capt. Richards will tell you that in the last few days more particularly, they have met with something very good indeed in the western shaft, which we have come to in the great extent of ground in the direction of the great cross-course which made Devon Consols so very rich in the old palmy days. We can only hope and trust that it will come to our lot to meet with such discoveries as they had 25 or 30 years ago. The statement of receipts and expenditure account shows that the credit balance on Oct. 31 last was 3037*l.* 11s. 4d. That has been augmented during the last six months to the amount of 4767*l.* 14s. 11d., and this amount is in cash in hand and at our bankers. That shows you that we have made a profit of something like 1700*l.* in the six months. The report which you have all read sets forth the particulars of what is going on, and as Capt. Richards is here he will be happy to answer any questions appertaining to that matter. The price of copper ore, as is also stated in the report, fluctuated something like 10*l.* a ton. When we started 12 months ago the price of Chili bars was at 57*l.* 10s. per ton, and it rose to about 71*l.* per ton during the last six or seven months, and it has been down again to 59*l.* or 60*l.* per ton on a very flat market. Now it has got up again something like 8*l.* per ton and is rising; and if what we hear is true we may expect that we are at last on the way to a gradual advance in the price of copper. The various electric companies which have been formed for all parts of this country and abroad, it is stated, will have to consume an enormous amount of copper wire and other metals, and this is giving a great impetus to the demand for copper, and I have been told that during the last fortnight or three weeks the consumption of copper and the purchases made for various parts have had the effect of decreasing the stocks to no less an extent than something like 3000 tons of copper. If that be so, and I have no doubt but that it is a fact, for I have received the information on very satisfactory authority, we may hope that during the next twelve months we shall see a gradual advance in copper. I would rather not see it go up too fast. It is much better to see it go up in a gradual way; but there are people very sanguine indeed that, instead of seeing copper at about 70*l.* per ton, we may see it up to 100*l.* per ton. However, that is a matter in the future. We can only hope that we shall all live to see that price again, and if so it will be a very grand thing for this company, and all other copper mining companies. You have in this pamphlet particulars of the work done, and since I came to the management of the concern you have had the various prices received for the ore sold from the time when Devon Consols started, in 1847, when copper was at 6*l.* 15s. per ton. Ten years afterwards, in 1857, it was 6*l.* per ton; in 1867, 5*l.* per ton; and in 1877, 3*l.* 10s. per ton. Then it came down to 2*l.* per ton in 1878, and 2*l.* 2s. in 1879. Then it rose a little, to 2*l.* 10s. 2d. per ton per ton in 1880, falling again to 1*l.* 17s. 2d. in 1881, and in the past six months the average has been 2*l.* 2s. 3d. Well, I need not tell you if we could get anything like the price we had in 1877 it would be a great satisfaction to us—that is, 3*l.* 10s. per ton, which I dare say we should get if the price of Chili bars went to 100*l.* That would mean, with something like the quantity of ore we are selling, a difference of almost 1000*l.* per month in the profit of this company; but if we had the price of 1867—that is 5*l.* per ton—that would place us in a very excellent position in regard to this company. However, these are matters, which the future will have to decide. We have had prognostications of rises in copper until one is sick and tired of hearing them; but now, as a matter of fact, the price of Chili bars has been put up 10*l.* per ton, and down about that, and is still fluctuating. Our sale last week was about as bad as we have had for a long period, but Capt. Richards assures us that—perhaps not the next sale, but the sale after—we shall commence to have better ore; but there are places where you have to take the poor ore away in the first place, before you can get to the richer places; but it is hoped that at the sale after next we shall increase our output, and get a better price for our ore. However, that is a matter for the next half-year. We are only dealing now with the present half-year. This is what we may term the annual meeting, and you have the balance-sheet made up to April 30 in every year, and that account shows that the capital account stands at 10,240*l.* We then debit the cost-sheet which we had to pay for the month of April 2549*l.* 16s., and for the reduction works 578*l.* 3s. 5d. The dues on the ores sold in March and April amounted to 223*l.* 19s., and the dues on the copper ores sold in May were 88*l.* 9s.; unclaimed dividends, 44*l.* 6s. Then, on the other side, we have property and assets altogether, including our receipts and expenditure balance of 4767*l.* 14s. 11d., amounting to the sum of 67135*l.* 15s. 7d. The property includes steam-engines, water-wheels, timber, iron, coal, steel, brass, powder, nails, and so forth that you see enumerated there, and our house property and various other matters that you will see specified in the accounts. Taking from that 67,135*l.* 15s. 7d. the capital account, you will see that there is a balance brought down of 53,429*l.* 2s. 2d. These accounts have been duly audited and examined by the auditors, who state that "in our opinion the accounts are correct, and the balance-sheet is a full and fair balance-sheet," and they vouch for their correctness according to the documents laid before them. At the end of the report you will find an account given, which I instituted some years ago with regard to the extent of workings, the machinery, tramways, lines, rods, and so forth. These have no doubt all been so well digested by each shareholder that it would be almost unnecessary to tell you anything further on the subject, or to occupy your time, excepting this, as you will see, from the commencement of the company up to March 23 we have sold copper ores to the amount of 3,344,446*l.* 7s. 7d.; we have paid to the Duke of Bedford for dues 257,528*l.* The arsenic sold from commencement to end of March, 1882, has realised 197,668*l.* 7s. 1d., and dues on that amounted to 10,181*l.* 8s. 9d. Mines' cost to March 13, 1882, have been 1,679,788*l.* 16s. 3d., and other payments—steam-engines, water-wheels, railway, reduction works cost, &c., upwards of 480,000*l.* The capital paid up, 1*l.* per share on 10,240 shares is 10,240*l.*, and the dividends (154) paid to April 30, 1881, or 11*l.* 7s per share on each 1*l.* share, 1,211,904*l.* The shafts sunk from commencement to March 18, 1882, have been 2574 fms. 0 ft. 9 in.; the winzes and rises, &c., 6108 fms. 1 ft. 4 in.; the levels and cross-cuts, &c., 28,249 fms. 4 ft. 6 in., or equal to 36,932 0 ft. 7 in., or about 42 miles. That is a summary of the whole matter; therefore, I now beg to move, gentlemen, "That the report of the board of directors and the statement of receipts and expenditure and balance-sheet, together with the auditors report thereon, be received and adopted, and entered on the minutes of this day's proceedings. Lord Claud Hamilton and Mr. Morris have just returned from visiting the mines, and will be able to tell you what they have seen there. (Cheers.)

The Right Hon. Lord CLAUD HAMILTON: I beg to second the motion, and I would just say that I have recently returned from the mines, and I can quite verify the statement made by Mr. Watson as to all the particulars he has gone through. The recent discovery in Watson's shaft is the most cheering thing that has happened for some time. There are specimens here, which those cognisant with these things will at once see to be very very rich. Every economy is being observed in the working, but those cognisant with the very extensive premises we have, and the very extensive area of the property, must know that the development of the mines involves a considerable amount of expenditure. We are bound to go on working in certain districts which we believe will not be very profitable, as we have to spend so much a year on exploratory work under the terms on which we hold our property; but these trials may at any time produce good results. Of course I cannot tell you how near you are to great success, or how long that success may be delayed. We have, however, a most promising indication—some specimens of which are here. Capt. Richards and Mr. Bawden are here, so I will not detain you further on these matters, but will second the motion so ably moved by the Chairman. (Cheers.)

Mr. H. STANLEY MORRIS added that he visited the mine a day or two before Lord C. Hamilton, and had been very much pleased to see the ore which Capt. Richards and Capt. Clemo had just brought up with them from the discovery. The shaft in which the discovery was made was 136 fms. west of Watson's shaft, on the same lode. The machinery on the mine had been materially improved within the past four years, before which it had been allowed to get to a very low ebb.

Mr. RICHARDSON remarked that they appeared to be working a poor class of ore now, but from the account given it was to be hoped that they would have an improvement in this respect shortly. He asked whether there was any chance of their getting a better price for their ores from the smelters? (Hear, hear.) That seemed to be the black feature in their position. (Hear, hear.)

The CHAIRMAN said he would have something to say about the smelting of their ores later on.

Mr. PIGGOT asked the relative price of copper and copper ore?

The CHAIRMAN replied that every rise of 1*l.* per ton in the price of the metal gave them about 1s. a ton additional for their ores.

Mr. HORNCASTLE asked whether the number of rock drills had been increased during the half-year?——The CHAIRMAN said they had not, as they had been spending a large sum of money in extending the arsenic works, with the view of increasing the returns of arsenic.

Mr. HORNCASTLE: Does this contract for arsenic end with this year?——The CHAIRMAN: Yes.

Mr. PIGGOT: Is it at a fixed price for the year?——The CHAIRMAN: Yes; I had very hard work to conclude the contract.

Mr. MOSES BAWDEN (the purser) said the price of copper had fluctuated between 60*l.* and 70*l.* per ton during the past six months; but they had sold their ores to the smelters at the rate of 48*l.* 6s. 10d. per ton. The difference was taken by the smelters as returning charges. Out of that margin they had, of course, to pay for their labour. The produce of their ores during the past three months had been about 4½ per cent., so that it took about 22 tons of ore to make a ton of fine copper. If the price of ore went up they could put on more men to increase the yield. With regard to the rock-drills, they had one in the 137 east, which was 213 fms. east of shaft, going away into whole ground, and they had one in the 115 east. In the western ground they had a rock-drill in the 190 fm. level, 25 fms. west of the shaft, and one in the 160. These were pioneer points, and they would probably lead to good discoveries. The discovery on Watson's lode was the most important thing which had taken place in the mines for some time, as they had a large tract of unexplored ground in the direction of the discovery—upwards of a mile in extent—and if the discovery continued to yield as well as it promised at present, they would do very well. In reply to questions, Mr. Bawden added that the grand discovery made some years ago in Wheal Maria was at a very shallow depth. The rock-drills were at work in the most profitable part of the mine.

A SHAREHOLDER observed that that there were no promises as to the future, as there had been in other reports.

Captain RICHARDS said he had never promised anything. He could only state the probabilities, and in his report he said, "In reviewing the operations of the past six months, I would observe that with the aid of our efficient rock-drill machinery, a great extent of ground has been explored at various depths, and in various directions, and although the discoveries during this period have not been equal to our expectations, founded on the general promising indications at different points of operation, the lodes still continue to maintain their size and character." He thought the stones on the table fully bore out what had been said as to the prospects in that part of the mine, at all events, more particularly as they had such an extent of ground westward.

Lord CLAUD HAMILTON remarked, with regard to the uncertainty of mining, that the other day he met Capt. Clemo, who has been connected with these mines for many years, and he stated that the great discovery which yielded the enormous wealth at Wheal Maria was unexpected by those working there ten minutes before the discovery was made.

Captain RICHARDS added that parts of the mines were almost abandoned at different times, on account of the poor character of the ground, which had afterwards yielded immense returns.

In reply to questions, the CHAIRMAN said they could not yet put a rock-drill in the new western shaft. Of course, metal mining was very different to coal mining, where certain seams were known to exist, and had only to be reached and the coal taken out. In metal mining they might have a poor lode for months, and even years together. At South Caradon, which had made such splendid returns, had not an end to value for a long period together. For some time Devon Consols had been as poor as a church mouse, in comparison to what it had been in times past. However, every information was given to the shareholders, and the weekly reports were on view at the offices every Friday, and were afterwards published in the *Mining Journal*. When the contract for the sale of the arsenic was made, between three and four o'clock one afternoon, the shareholders all received the information by the following morning's post. (Hear, hear.) He expressed the hope that in the coming autumn the shareholders would visit the property, where they would have everything explained to them by Mr. Bawden, Capt. Richards, or the other agents. (Hear, hear.) With regard to the balance in hand, it must be remembered that in the current six months they would have to meet seven months' costs against six months' returns.——The report and accounts were then unanimously adopted.

The CHAIRMAN added that he had been in negociation as to the question of smelting, but it came to nothing; but he was now in negociation with some other people, and he hoped to be able to put things on a better basis. If they had smelting-works of their own he believed they would get a better price than at present to the extent of 5s. or 6s. a ton. (Hear, hear.) If a company were started with this object the shareholders would have the opportunity given them of coming in and participating in it, and he believed that if such a company existed in connection with Devon Consols and other mines this company would save from 3000*l.* to 4000*l.* a year.

Mr. STUART proposed that the directors should receive the same amount of remuneration as they hitherto received for their services during the past year.

Mr. WEIR seconded the proposition, which was carried after a short discussion.

On the motion of Mr. WAUD, seconded by Mr. PIGGOT, the retiring directors—Lord C. Hamilton, Mr. H. Stanley Morris, and Mr. Peter Watson—were re-elected; and on the motion of Mr. HORNCASTLE, seconded by Mr. WEIR, the auditors were re-appointed.

On the motion of the CHAIRMAN, seconded by Admiral STODDART, the usual vote of 30 guineas towards the education of the miners' children was passed.

A cordial vote of thanks to the Chairman, directors, and officers having been passed, the CHAIRMAN acknowledged the compliment, and the meeting then closed.

DEVON GREAT UNITED COMPANY.

The ordinary general meeting of shareholders was held at the offices of the company, Austin Friars, on Thursday,

The Right. Hon. Lord CLAUD HAMILTON (the Chairman of the company) presiding.

Mr. W. H. ALLEN (the secretary) read the notice convening the meeting. The reports and accounts were taken as read.

The CHAIRMAN said: Gentlemen, I shall feel it my duty to detain you for a very short time. You are all aware that this Devon Great United Company was in existence some time previously, and that it ceased to work in consequence of a disagreement on the part of the proprietors, and for a short time the mine was not in working. Then it was taken up by the present company. It is not like the one which we have just been discussing—Devon Great Consols, which is a very large company. This is a small company, and the capital which we raised in order to carry out the workings is a limited amount, and we have felt it our duty to proceed very cautiously and carefully, practising the strictest economy. Some may say that caution and strict economy may be a bad policy, as causing loss of time, but, in fact, the work done has been done most satisfactorily, economically, and most efficiently. The next point was to restore the old machinery, and to get new machinery where it was required, and when you see what has been done I think you will be satisfied that the money has been well spent. We have renewed all the old machinery, which is now in excellent working order, and the pumping arrangements are most efficient. We have spent a considerable sum of money, as is set forth in the report, in purchasing the various necessary machinery, and we have done that with very great economy. We have been very successful in getting most perfectly efficient machinery at very reasonable prices. That has been gradually brought to the mine, and is now either actually put up or in such a condition that it will soon be in full working. The air-compressor has been fixed. I was there last week, and saw that the work had been excellently done. The boiler, which is an essential portion of our future working, will, it is expected, be ready in a week, and the receiver will be shortly made. We are in some cases using old materials, out of which we have made valuable properties. We are working in various directions, and are finding some very good stuff; indeed, some of it is exceedingly promising. We are not yet, as you are fully aware of, turning it into money, as we are not yet sufficiently advanced for that. We have about 60 tons of ore on the ground and about 40 tons of mundic, but at present we do not propose to send that to market, as the reduction works are not in working order, and will not be for a short time. As soon as we have a sufficient amount of ore to keep up a proper supply we shall have the reduction works in order and be getting results from sales. Hitherto we have been doing deadwork, which is now mainly completed, and the results are most satisfactory. Taking into consideration the amount of money we have spent in these operations, I know there has been an objection on the part of some of the shareholders that we ought to have expended more money and produced results somewhat quicker; but those who have been accustomed to these works for many years look upon it that increased haste would not have been economical. But upon that subject Mr. Bawden and Capt. Richards will give you any details which you may wish to have. When our rock-drills are put to work the progress will be much more rapid; but until that is done we have to proceed with hand labour. The financial portion of the report is drawn up in such a plain way that I hardly imagine any one of you will require any explanation; but if there is, that explanation will be immediately given. I will now propose, "That the report of the board of directors and the statement of accounts, together with the auditor's report thereon, be received, adopted, and entered on the minutes of this day's proceedings."

Mr. PETER WATSON: I second that with much pleasure, and in doing so I would state that we have a balance, as will be seen, of 1868*l.* 13s. 8d. cash in hand and at the bankers, and there are arrears of call to the extent of 1000*l.*, so that, with the 1868*l.*, we have nearly 3000*l.* available altogether. It has taken, as a matter of course, a very long time to do all that we have done. One gentleman wrote that it had taken us three years, and was disappointed that it had taken so long to develope the property; but we have really been working only about 18 months, and in doing that Mr. Bawden and Capt. Richards will be able to tell you that in forking water and putting up the machinery, you cannot calculate to a week or a month what is going to take place in mining. There is a great deal to do in fixing pitwork, putting in timber, and difficulties have to be contended with even at surface, and great care and anxiety has to be exercised to keep the thing right when it is once started. It has taken us a much longer time than we originally expected; but at the same time the thing has been effectually and properly done, and the mine is being laid out with the hope that when we extend our levels westward and eastward something good will be discovered, but especially westward the agents anticipate that some very good discoveries will be made. During the last few days Lord Claud Hamilton and Mr. Morris have been there, and we have here some specimens taken from the 60 west.

Captain RICHARDS added that they had 130 fms. before them in the 60 west in a beautiful channel of ground, and he had no doubt that they would make very good discoveries. In Willesford's shaft they had a very promising lode, and they would soon be deep enough for another level. He had every confidence in the mine in depth and east and west, more particularly west. Better ore than that which had been raised from the 60 west could not be seen anywhere, and he believed they would have an improvement there very soon.

Mr. RICHARDSON: How wide is the lode at present?——Captain RICHARDS: About 2½ ft.

Mr. BENTLEY: When will the rock-boring machinery be started?——Mr. MOSES BAWDEN: The compressor is fixed. We have to fix it up, and put the boiler up; but I should hope that in about a fortnight they will be on the mine, and soon after we shall have them in the 60 on the Capel Tor and Watson's lodes. We can communicate the two points eventually if we make good discoveries, and we can remove the rock-drills, and the levels would be fairly ventilated. We have proved beyond doubt that the lode runs through the property, as is proved by the Wheal William shaft.

The motion was then carried unanimously.

Admiral STODDART proposed the re-election of the retiring directors, Mr. Henry Bentley and Mr. Samuel York.——Mr. STEWART seconded the proposition, which was carried. The auditors were also re-elected, and the proceedings closed with a vote of thanks to the Chairman, directors, and officers of the company.

PANDORA LEAD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the offices of the company, Austin Friars, on Thursday,

Mr. SAMUEL YORK in the chair,

To take into consideration the present position of the company, and pass such resolutions as might be deemed desirable.

The SECRETARY read the notice calling the meeting, and also the following report:—

May 18.—Engine-shaft: We have not done anything at the bottom of the engine-shaft since the date of my last general report, so by referring to it you will see the position in which it is standing.—45 Fathom Level: This level driving south of shaft is now out 25 fathoms from shaft, and is in the present end showing a strong well-defined lode, worth ¼ ton of lead and 1 ton of blende to a fathom. In the last three months of driving we have had some very good lead at times, worth 1½ ton of lead to a fathom, with strong blende. We have two stopes working over this level, which together are worth 2 tons of lead and 2 tons of blende to a fathom. The ground here is very wet and bad for stoping, and will be so till we can effect a communication with the bottom of winze sunk in 33 over this; which would effectually drain the lode, and give us better ventilation and advantage for stoping. We have cut a stope 2 fms. 3 ft. deep by 4 fms. long under the 45 north from shaft. This stope has produced about 35 tons of lead, or 2½ tons per fathom for width of lode. At this depth the lead drops away or throws across the lode from the hanging to the footwall, leaving the hanging side comparatively poor, similar to what we had in sinking the shaft. This leader of ore, which is the same we had crossing the shaft, is still going down along the bottom, and showing some splendid lead towards the north end, where it is crossing the lode obliquely and making with the hanging wall going north. We are now cutting a stope under the level south of shaft 8, which is worth 1½ ton of lead per cubic fathom.—33 Fathom Level: The two stopes working over this level south of No. 1 winze are together worth 25 cwts. of lead and 2 tons of blende to a fathom. The No. 1 winze sunk in No. 1 run south is still standing full of water, but in another month we hope to have it holed to the 45 stope below.—Goldard's Lode: 33 Fathom Level: We are now putting up a rise in south end of this level to meet the No. 3 winze sinking under 23. The lode here is showing a little lead and blende, but not to value.—23 Fathom Level: The No. 3 winze sinking to meet the rise below is down 5 fathoms under level. The lode here is looking well, producing 1 ton of lead and 1 ton of blende to a fathom, in easy ground. Another month should put this through to the rise, and open up a fresh stope for us. At the different points I have noted, we have but 26 hands employed, and these are producing 20 tons of lead and 30 tons of blende a month. The pumping and dressing machinery is all working well, and we have a fair supply of water for this season of the year.—Remarks: As regards our underground prospects, I have but little to add to the remarks I made three months ago when giving you my general report. Since then nothing has been done at the bottom of the engine-shaft where we ought to have been driving out a 55, opening up a fresh section of ground. The delay in doing this is a barrier to our progress in bringing the mine to a proper development, and it naturally follows that, through this, we have less ore in sight than we had six months ago, but without materially altering the prospects of the mine. This work, then, should be advanced at once, and the 45 and 33 levels extended. By the extension of these levels, at (say) an extra cost or 50*l.* a month, we should very soon double the value of the mine and its capabilities for making returns. The present returns of 50 tons a month, raised by 26 men, is, I think, sufficient proof of what the mine would do if opened up on a scale commensurate with its merits.—Surface Winding-wheel: I cannot pass without again calling your attention to the matter of surface arrangements, dressing floors, &c. In the first place, the 21-ft. water-wheel should be erected for winding; the old wheel will not wind more than we are now doing without a waste of water power.—New Dressing-floors: Our present dressing floors are capable of turning out about 60 tons of dressed ore a month, at a cost of 15s. per ton (including grating and spalling). But to do this with the pumping the big wheel requires double the quantity of water it would take either for pumping or dressing seprately. It is, therefore, evident that had we another wheel for crushing and dressing one half the water now used daily would be saved. To meet this want I should erect a 40-in. wheel close by the shaft to take the water from under the winding wheel, the same to be run on to the big wheel as at present. This, with a good crusher and two plunger jiggers, is all the extra machinery we should require, the rest could be supplied from the present dressing floors, and leave the old crushers with two sets of jiggers where they are to be used as an auxiliary. By this arrangement we should grate, pick, and spall the stuff as it comes from the shaft and wheel it direct to the crushers. This would save all the tramming, and give us the advantage of concentrating all hands in one place, and the crusher could be arranged to connect with the engine in case of necessity. This I calculate could be done for (say) 650*l.* to 700*l.*, and by leaving the crusher and part of the other machinery standing where they are, dressing could be carried on without interruption whilst the new floors are being made. By having the dressing done by the shaft with an additional wheel we should save at least 200*l.* a year in the future working of the mine.—H. NOTTINGHAM.

he CHAIRMAN said the shareholders were aware of the object with which they were called together to-day. He would say this for the Pandora Mine—that they never had sufficient capital to start with, which had been a great misfortune. Had they had a working capital of 20,000*l.* it would have been ample for the purpose, and the company would probably now have been in a different position. But the draw-back was that, with the small capital at their disposal, they had always been working from hand to mouth for some years past. It had been stated at a previous meeting that the company had sold about 20,000*l.* worth of lead, but there had been no profitable result to the shareholders; but that quantity had been sold over a period of 11 years, and, therefore, it was not to be wondered at that the shareholders were not able to pay a dividend, which they would have liked to have done, and which they fully expected would be the case if they had had adequate means to develope the mine properly, and put down the machinery necessary for the proper working of the property. There was no property in the Cardiganshire district superior to the Pandora, but it was impossible for the directors to go on working it unless they had the means to first properly develope it. Captain Nottingham was a most able and careful man, but owing to the want of means he had only been able to work from hand to mouth, and unless he could have the necessary funds it was impossible for him to go on and place the mine in a state to produce satisfactory returns. The mine was exceedingly deep and rich, and the deeper they went the more the mine improved. He hoped the shareholders would come forward and suggest some means of raising the necessary capital. Unless this was done there was no alternative but to close the mine and sell the property, which originally cost 7000*l.* to 8000*l.*, and which was worth in the market double that amount.

Mr. J. H. CROFTS asked what the directors considered would be the minimum sum required to develope the mine?——The CHAIRMAN said he was satisfied that 10,000*l.* would be ample. It would be necessary to have rock-boring drills and other machinery.

Mr. HILL asked the present position of the company?——The CHAIRMAN said the liabilities were 835*l.* 3s. 8d., exclusive of the mortgage of 1000*l.*

Mr. J. H. MURCHISON said that in March, 1881, a circular was sent to the shareholders containing a report from Capt. Daw, who had inspected the property, and stated that with proper development the mine would enter into a good position; that circular had been sent to all the shareholders, but they had only succeeded in getting small subscriptions, amounting in all to 100*l.* If the money had been got at once, and at the time, it could have been spent in boring and new dressing machinery, but the thing had dragged on month after month. If the money had been subscribed quickly the company might have been in a much better position. In his report Capt. Daw stated that at the bottom of the mine there was a splendid lode, which should be worked with vigour; and that with energetic development the mine should rapidly enter on a prosperous career, paying good dividends.

Capt. NOTTINGHAM said he had sunk the engine-shaft 10 fms. deeper, but they had not driven from the present bottom of the shaft, and therefore the expense of sinking had not yet been of any benefit to the shareholders. It was an expense which really ought to be charged to capital account. The shaft was down 55 fathoms, and they could drive out at that depth, but it would not give a full 10 fm. level, and they ought to sink 1 fm. deeper. He considered that two months would finish the sinking of the shaft, and then they could strip the footwall of the lode. As regarded the amount which would be required, he was satisfied that 5000*l.* would be ample for the purpose, and would, he believed, make it a good paying mine; but with the present price of lead they could not work at a profit. He was now raising 20 tons of lead and 30 tons of blende per month, with 26 men working below. If worked properly, he believed Pandora would stand equal to any mine in the kingdom. But if additional capital were not raised to carry on the mine he should advise the company to sell it, because working the mine as they were doing at present they were simply spoiling it. If they had the capital he had mentioned they could nearly double the number of men underground.

Mr. CROFTS, who said he was present as a shareholder, and also as representing Mr. Wright, of Glasgow, a very large shareholder, stated he thought there was not much chance of getting 5000*l.* for the shareholders, but possibly the company might be reconstructed or money might be raised on mortgage. He fully endorsed what had been said about the value of the mine, but, as the Chairman had said, the company had never had sufficient capital. He believed Mr.

Wright was disposed to assist the company provided the other shareholders showed a similar disposition.

The CHAIRMAN, after some further discussion, suggested that one or two shareholders be requested to meet the directors and Mr. Murchison, with the view of consulting as to the best means to be adopted to raise the necessary capital to carry on the mine. This suggestion met with unanimous approval, and Mr. Crofts and Mr. Hill were appointed to meet and consult with the board, the result to be communicated to the shareholders.

The meeting then broke up.

KIT HILL GREAT CONSOLS COMPANY.

The ordinary general meeting of shareholders was held at the offices of the company, Austin Friars, on Thursday,

The Right Hon. Lord CLAUD HAMILTON in the chair.

Mr. W. H. ALLEN (the secretary) read the notice convening the meeting. The reports and accounts were taken as read.

The CHAIRMAN said: This is a company connected with a magnificent property on rather a larger scale than the last one before us—Devon Great United. You are all aware that it is divided into two distinct portions—that at the top of hill—the highest hill in Cornwall, by the way—and the other at the mouth of the tunnel. Now, I will begin with the tunnel. This tunnel is 8 ft. high and 8 ft. wide. It is a splendid tunnel. The masonry which was necessary at the commencement of it has been completed for a distance of 100 ft., and it is now in such firm rock that masonry is no longer required. This great tunnel is, of course, progressing slowly until we get our rock-drills. We have now got all the plant necessary to drive the rock-drills—a Robey engine of 50-horse power, a large air-compressor, receiver, and rock-drills ready to put in. These cumbrous pieces of machinery have been brought to the mouth of the tunnel, and I am happy to say that it has been done without accident of any kind. Already a considerable portion of the machinery is fixed on a firm basis of concrete, and is ready to be brought into action very shortly. The engine compressor is fixed on a massive bed 8 ft. thick; the work is splendidly done, and the whole of the other necessary machinery attached to that will be ready to work probably in about a fortnight's time. The bank will be necessary for future working. Our machinery and the site of the reduction works is progressing gradually, and that will also be a bank and the head of the future reservoir. The great advantage of this position is that we are not obliged to get our materials from a distance. On the contrary, material for working the tunnel suffices for the purpose, and is steadily going on. Satisfactory progress has been made in the past six months. The whole of the work seems to have been done in such a firm manner as to promise to be permanent, and not to require repair of any kind. The amount of work that has been done has required a considerable amount of expenditure, but still, when you come to look at the amount of work that has been accomplished, I believe you will all consider it has been done economically. All these observations apply to the mouth of the tunnel. I now invite you to go to the top of the hill. There we found the machinery out of repair. That has all been put in perfect order, and has been working in a most satisfactory manner for a considerable time. We have bought an amount of machinery on exceptionally favourable circumstances, and we have had it raised to the top of the high hill—itself a great labour—without accident of any kind. We have rock-drills and an air compressor, which will soon be put into operation. At present we have only manual labour, but in three or four weeks the rock-drills will be at work. The engine-shaft has been sunk about 10 fms. below the 62.. We are meeting in these operations with a great amount of excellent tinstuff. Some people think that it should be taken to the market at once; but we think it would be unworthy of our attention at present. The boiler is ready to be delivered. I think it unnecessary to go into details further, for you have the presence of Mr. Bawden and Capt. Richards, who know every inch of the ground. He (the Chairman) then moved the adoption of the report and accounts

Mr. PETER WATSON, in seconding the motion, remarked that the tunnel was not an ordinary adit level, for it was more than double the size of an adit level, and therefore the progress made by hand labour had been very satisfactory. They had had a great many difficulties to contend with; but under all the circumstances they had, he thought, made very excellent progress in the driving of this tunnel, and in about a fortnight they would begin to drive with the rock-boring machinery, and he hoped that thereafter they would drive at the rate of something like 20 fms. a month. Their balance was reduced to about 2000*l.* from the reasons stated in the report, but for the amount spent they had received ample value. They had about 50 fms. further to drive before meeting the granite formation, where it was expected that good discoveries would be made, but they might make good discoveries at any moment. He did not know any sett where there was more likelihood of obtaining good results than at Kit Hill. (Cheers.)

Mr. WATSON, in answer to a question, said they had sufficient machinery for their present requirements. Of course if they met with productive lodes in the tunnel they would have to get additional machinery. They could not tell the value of the tinstuff on hand until it was dressed.

Mr. H. WILSON added that they had obtained machinery for 900*l.* which had originally cost over 2000*l.*

Mr. BAWDEN added a few words of explanation of the plan exhibited at the meeting, and expressed his opinion that they possessed a very fine property, and one which would produce excellent results, seeing that it had for its neighbours such mines as Hingston Down, which had returned over 250,000*l.* in profits, and Holmbush.

Capt. RICHARDS believed the mine would prove to be one of the finest properties in the two counties.

The motion was then put and carried unanimously.

The retiring directors—Messrs. Bentley and York—were re-elected, as were also the auditors.

The meeting closed with a cordial vote of thanks to the Chairman, directors, and officers of the company.

WHEAL COATES MINING COMPANY.

An ordinary general meeting of shareholders was held at the offices Walbrook, on Thursday.

On the motion of Mr. JOHN B. REYNOLDS, the chair was taken by the Hon. ASHLEY G. J. PONSONBY.

The notice calling the meeting was read by Mr. FREDERICK J. HARVEY, the secretary.

The CHAIRMAN, in moving that the balance-sheet and vouchers be adopted and passed, said it was not his intention to take up much of the time of the meeting, as Mr. Reynolds had been down to the mine more recently than he had, and would be able to give a more accurate report and fuller details. At the same time he might be permitted to congratulate the shareholders on the extremely satisfactory way in which the accounts had come out. To himself it was a matter of great surprise, because he had no idea it would be so satisfactory. The call had produced 1200*l.*, and they had now 1138*l.* 16*l.* 10*d.* at the bankers, after four months' working. They had sold 35 tons 18 cwts. of tin, which was extremely good working. They had gradually increased their sales. They began in the first month with 7 tons 2 cwts.; the next month the sales were 7 tons 10 cwts.; in the third month 8 tons 10 cwts.; and in the next 12 tons 15 cwts. The expenditure in proportion to the tin sales had diminished. For the 7 tons 2 cwts. it cost 615*l.* 1s. 6d.; for the 7 tons 10 cwts. 615*l.* 1s. 3d.; for the 8 tons 10 cwts. 535*l.* 7s. 1d.; and for the 12 tons 15 cwts. it only cost 582*l.* 3s. 6d. This was very satisfactory, and reflected great credit on Capt. Vivian's management at the mine. If they had received a better price for the tin, of course the results to the company would have been much better. He could only hope that they would go on in the same manner, and be able shortly to pay large dividends. (Cheers.) But they must remember that there would be expenditure incurred for the purchase of certain machinery, but Captain Vivian would be able to tell them more about that. He would ask the secretary to read the accounts.

Mr. HARVEY read the balance-sheet, and added that the accounts had been audited by Mr. Stephen Payne, one of the shareholders, who had appended to them a certificate to the effect that he had examined the vouchers and accounts, and found them to be correct. Mr. Harvey added: I am sure we are all very much obliged to this gentleman for the trouble he has taken. (Hear, hear.) You will observe by the bank-book, which is lying on the table for the inspection of the shareholders, that the balance shown therein is 1144*l.* 16s. 10d., but there is one cheque outstanding for an amount of 5*l.* 5s., which is the difference between the balance in the bank-book and the balance in the balance-sheet.

The CHAIRMAN said the shareholders would observe that 15*l.* had been paid for insurance against liability under the Employers' Liability Act. This was a new item in all mining accounts, and was to meet any risk for accident which might accrue to any of the people employed. (Hear, hear.) The shareholders would also observe that all the royalties were paid, and everything else, and that they started with 1138*l.* 16s. 10d. in hand. The company had paid cash for everything, and got as much discount as they possibly could. In every way the committee had done their best, and had worked hard to promote the welfare of the company in every possible way. Not only had he, as Chairman, found great assistance from the way in which the committee worked, but also immense assistance from Mr. Reynolds. Referring to the fact that the mine was now carried on on the Cost-book System, he said he believed it was the only proper way of carrying on a mining speculation such as this in safety and profit to the shareholders, for the simple reason that they did not call up money except when it was required, and at the same time they were not liable to come to the end of their tether at the very moment they wanted money to carry on the concern. Before he became connected with the present company he had no knowledge of the new system, and had never seen it at work, but having had the pleasure of becoming thoroughly acquainted with it he had come to the conclusion that it was a most satisfactory system, especially when managed in the able way in which it was managed in Mr. Reynolds' office. (Cheers.) Later on he should have much pleasure in moving a vote of thanks to Mr. Reynolds and Capt. Vivian for the way in which they had carried on the works. The shareholders could not be in better hands. (Cheers.)

Mr. HARVEY then read Capt. Vivian's report, which was as follows —

May 24.—I beg to hand you the following report of this mine:—The cross-cut driving south at the 80, by six men, at 10*l.* per fathom; we have driven 10 fms. 3 ft. south of the south part of the lode. By a survey made by Mr. Henderson, which is now before you, I hope shortly to intersect the Wheal Kitty lode at this point. The 80, driving west, on the south part of the lode, by six men, at 8*l.* 10s. per fathom; we have driven 9 fms. 4 ft., worth about 9*l.* per fathom for the whole length driven. The 70, driving west, by two men, at 6*l.* per fathom; lode small and poor; ground driven 8 fathoms. The 70, driving east, by four men, at 9*l.* per fathom; ground driven 3 fms.; when this end was started it was of no value, now worth 9*l.* per fathom. The 60, driving west, by four men, at 6*l.* per fathom; ground driven 5 fms., worth 6*l.* per fathom. The 50, driving east, by four men, at 8*l.* 10s. per fathom; ground driven about 9 fms., worth 6*l.* per fathom. The 20, driving east, by four men, at 6*l.* per fathom; ground driven 5 fms., worth about 9*l.* per fathom. We have let a cross-cut to drive south at the 70, to four men, at 8*l.* 10s. per fathom, to intersect the south part of the lode, which is now being driven on at the 80. Ground driven during the 16 weeks 50 fathoms. We have 11 tribute pitches, which are being worked by 46 men and boys, at tributes varying from 2s. 6d. to 13s. 4d. in 1*l.* We have also 34 men on tutwork driving levels. I beg to state provided we get a fair price for tin—60*l.* per ton—and a little better quality tinstuff, with only an additional 6 or 7 lbs. of tin per ton of stuff, we could make fair profits, which would bring us into the Dividend List. By a continuance in driving the levels, as we are now doing, and opening the mine fairly, we may reasonably expect to realise these most desirable results.—WM. VIVIAN.

Mr. JOHN B. REYNOLDS said: Gentlemen, I will take the opportunity, if you will allow me, of seconding the report which has been so ably moved by the Chairman, and I have much pleasure in performing this duty. The accounts are exceedingly simple. They are kept by our excellent secretary, Mr. Harvey, and, therefore, no credit is due to me under that head. I may also say that we have the advantage of a strict and permanent auditor on our committee, Mr. Mitcheson, who very kindly goes through the cost sheets, dissects all the items, and makes himself thoroughly conversant with everything connected with the expenditure before the cheques are signed for the costs. We hold this is not absolutely necessary, seeing that our managers are so well known for ability and integrity; but we closely check these costs as a matter of business simply, and the same method is adopted in the other mines in this office. (Hear, hear.) The Chairman, I need hardly say, has made a correct statement in saying that there are no liabilities due and unpaid. It is a very simple system we adopt. As you know, we pay cash for everything and take discount, and consequently, no doubt, the mine takes an exceptional position because of the regularity of these cash transactions. (Hear, hear.) I went to the mine, as Mr. Ponsonby has said, about a fortnight ago, and I was very much pleased with what I saw there. The machinery, of course, is old. Wheal Coates has been worked by some persons or other for a long time past. The mine has gone through the usual vicissitudes which, I think, almost all mines go through, as a rule, before they come into a profitable state. (Hear, hear.) I was not aware, when I took the mine into this office, that the immediate prospects were anything like so good as they are. I had the very best reasons for supposing that we should have wanted a call again at this meeting. I do not know whether Capt. Vivian has a magic wand or what, but he does take us by surprise always. I am now so accustomed to his surprises that I ought to have anticipated four months ago that your position to-day would have been better than I was given to understand. The machinery on the mine is undoubtedly old. The pumping-engine was made in the year 1800—(a laugh)—and is, therefore, about 82 years of age. I think the winding-engine is also of a very ancient type, as is the stamping-engine and all the machinery, which is a point with which we have to deal. Nevertheless all the machinery is adapted for our requirements, and I am happy to say that Capt. Vivian is not going to recommend us to spend much money about the machinery, simply because he does not think it is necessary. The time may come when a little additional outlay will be advisable, but that time has not yet arrived. (Hear, hear.) As to the West Kitty lode, you will see by the agent's report that they expect soon to meet with it. On that subject I must leave Capt. Vivian to give his own explanation, for he will be very much better able to explain it than I can. Altogether, I think that the mine and the company are in a very satisfactory condition. I am happy to say that in the company there is perfect unanimity on all hands, and union you know is strength, whilst a divided company can never prosper. (Hear, hear.) This company is as one man, and working resolutely up to a certain point—up to the Dividend List. (Cheers.) As to when you will get there we cannot tell, simply because we cannot tell what freaks may be played on the tin market. We cannot forecast what the price of tin is likely to be in the next twelve months, but I think it is a very reasonable assumption that it will not go below the present price. We get for black tin now about 60*l.* per ton, and I think it is likely we shall not have less in the future. That is my opinion—it may be worth nothing, but I am making my calculations upon that. If we do better your accounts will bear a still further improved aspect. I am delighted, Mr. Chairman and gentlemen, to congratulate you upon being on the mining field of St. Agnes. It is a splendid district, and that you may share in the good results which are being rapidly brought to light at West Kitty is my earnest hope, and if you get the West Kitty lode good there is no doubt about it that your shares would be honestly worth, and really marketable, at 4*l.* or 5*l.* per share. (Cheers.) I am very glad, indeed, to have the opportunity of meeting you, and expressing myself in this way, and I need hardly assure you that business of the future will be conducted in precisely the same way as in the past. I shall be very glad if the shareholders will now take a little more interest in the progress of the company. We are glad to see shareholders here at any time; the office is open to them, and the books are open to their inspection, and I am sure they will be treated courteously by Mr. Harvey, the secretary, and the other officers. (Cheers.) I have much pleasure in seconding the proposition.

Capt. VIVIAN said the shareholders had heard his report on the mine, and he was not going to make a speech on the present occasion, but perhaps he might be allowed to make a few practical remarks with regard to the mine. (Hear, hear.) This was the first time he had had the pleasure of meeting the shareholders at a meeting of Wheal Coates. It had been said that Wheal Coates was not going to pay, and that it was a thing of the past, and so on, but he did not believe it. (Hear, hear.) He believed that Wheal Coates was going to pay, but the agents and those who had the management of it would have their work to do. They had to work very economically. They had altered the system of working, and had altered the expenditure a little, but he thought there was more to be done in that direction. They were going to improve the machinery. The machinery was old, but there were improvements to be made on it. Mr. Michell, the purser, had ordered work. In the last 16 weeks' working they had saved on the item for coals, and perhaps they would save further in the next 16 weeks. As regarded the mine itself, it was a large lode, and it was not a hard lode for working; and, as he had said in his report, an improvement in the price of tin would bring the mine into a paying state. How could it be brought about? The ground had been taken away, and they were now driving eight levels, six of them on the course of the lode. All practical men knew that the life and soul of mining was the driving of cross-cuts and levels, and opening up the mine, and this he intended to push on as rapidly as possible. The 70 fm. level had not been driven for some time, and when the present company resumed the driving there it was hard and poor, and was not worth anything. They had driven only 3 fms. upon it, and they had now a lode there worth 9*l.* per fathom. (Hear, hear.) That was further east than any of the other levels, and his own opinion was they would have to go east to meet with tin. There was a gentleman in the room whom he did not expect to see here, who knew the district many years before he did, who told him that the recent company went to work in the wrong place, that the old mine made tin to the east of the cross-cut. At the time that statement was made he (Capt. Vivian) never thought he should have anything to do with the mine; but at the same time he did not forget what he had heard, and as soon as he had the management he turned his attention to the eastern portion. In the 50 they had driven 3 or 9 fms. of ground which would pay to take away, and leave a little profit. If they pushed on the levels he had no doubt whatever they would have further improvements. They would see it stated that the tin in Wheal Coates was of a low quality, and so it was, but he was not frightened about that. Two years since there were hundreds of tons of tinstuff in West Kitty the average of which was not worth more than 13*l.* per ton. The average in Wheal Coates was about 25*l.*, which they would see was low, but the tribute ground would average more than that. They had driven 50 fms. of ground in the last 16 weeks, and with the kind of ground they were on now they ought to get through 80 fms. in the next 16 weeks. (Cheers.)

Dr. WHITWORTH said that so long ago as 40 years he was the first to call attention to the geological system of Beacon Hill, and its suitableness for mining operations. It was soft decomposed granite, richly productive of mineral. In West Kitty the killas burst through the slate, and it had been proved that wherever the lodes came in contact with soft decomposed granite it produced mineral largely. He remembered that when the mine was worked 40 years ago the deepest part was 12 fm. below adit, and it was so now, and it then returned a large quantity of tin, but the old workers were disappointed, because, although tin was then worth 35*l.* per ton, there was a lawsuit involving the outlay of several thousands of pounds, and when tin became lower in price they stopped operations. They could not have better defined lodes, or better geological formation, anywhere than to the west of the Beacon. He could only say that under the Cost-book System, and the "no credit" system, and under the able management of Capt. Vivian, the shareholders might fairly and justly calculate upon success in Wheal Coates. (Cheers.)

Mr. MICHELL said he fully endorsed all that had been said regarding the favourable character of the accounts, and upon the fact that everything had been charged up to date. As local purser, everything passed through his hands, and he could state that every known liability was charged and paid. (Cheers.) Mr Reynolds made a remark with regard to the machinery being old; it was true it was old, but Mr. Reynolds omitted to mention that the machinery was in the position of the Irishman's gun—since it was first made it had had new lock, stock, and barrel. (A laugh.) In like manner, the renovations of the machinery on the mine had been of a very material character. As regarded the working of the mine, the result of the change from the system of stoping on tutwork to working on tribute had not yet become fully apparent, and the shareholders had not yet had the full benefit of it. At first there was some objection to working the mine on tribute. It was thought that there were no real tributers on the mine, and, to a certain extent, that was true. There was not that class of men they would like to have, as a whole, as a body of tributers, and the change from the system of stoping on tutwork to working on tribute was not easily effected. Therefore the company would not at once reap the full benefit of the change. In the first two months of the present accounts they did not reap anything like as much benefit from the change as they were reaping now, and as they would reap in future. The men were now getting better into work under the new system. In the first month they could not get more than 3*l.* 6s. per month, but in the next month they got 3*l.* 12s., and now they were getting 3*l.* 16s. Of course, it was as much to the benefit of the company as it was to the men that they should earn more on tribute, because the more the men earned the larger would be the amount coming to the company, and the larger would be the margin for profit. He hoped that by the next meeting they would not only feel the beneficial results of working the old lode, but also that by that time they would see the Wheal Kitty lode, for it could not be far distant.

The resolution for the adoption of the report and accounts was then put and carried unanimously.

Mr. REYNOLDS said the committee were of opinion that it would very much facilitate the business of the company if they had a permanent Chairman. It was not usual in a Cost-book mine to have a permanent Chairman, but this was one of those innovations which had been introduced in this office, and which had been found to work exceedingly well. They would anticipate the name of the gentleman whom he was about to propose. They had had the advantage of hearing the Hon. Mr. Ponsonby, and he was sure they would all agree that for courtesy, ability, straightforwardness and firmness, they were not likely to get his superior. (Cheers.) Mr. Ponsonby also held a large stake in the company—more than one-sixth of the whole, and, therefore, he had great pleasure in moving that the Hon. Mr. Ponsonby be appointed permanent Chairman. (Cheers.)

Mr. COUZENS seconded the motion, and said he was a shareholder in Wheal Coates when things were not so bright as they were to-day. He had watched the working of the company ever since, and it was a bright and pleasant contrast to-day compared with its past history. (Cheers.) He came to-day expecting some good things would be brought before them, but he certainly was surprised to hear they were in such a good position. He believed the prospects of the mine for many years had not been so bright as to-day. (Cheers.) He bought shares on the fact that Capt. Vivian was manager of the mine, and also because it was changed from Limited Liability to the Cost-book System. (Hear, hear.) He fully endorsed what the Chairman had said with regard to the advantages of the Cost-book System, and he could only say that he would never again, after the experience he had made, touch a Limited Liability mine. (Cheers.) He believed there was the prospect of great and good results in Wheal Coates. He had great confidence in the St. Agnes district, and it was not unfounded, seeing what had turned up at West Kitty and New Kitty, and he hoped Wheal Coates and West Polbreen would follow suit. The mine was thoroughly well managed, and everything exposed to the light of day, and they might have the fullest confidence that every shilling of the shareholders' money would be wisely spent. (Cheers.)——The resolution was put and carried unanimously.

The CHAIRMAN acknowledged his election, and said he was ably supported by the committee and the officers of the company, and he looked forward to the day when he should have the pleasure of signing cheques for dividend. (Cheers.) The great difficulty of the company under the Limited Liability system was that when the mine most wanted money it was always starved.

Mr. MICHELL said that some time since it was decided to insure against legal liability under the Employers' Liability Act. Since then the matter had been more fully discussed, and it was thought desirable to insure against all accidents whether the company were legally liable or not, so as to place the company in as good a position, as far as the workmen were concerned, as other mines. He moved—"That the action of the committee in insuring against liability under the Employers' Liability Act be, and is hereby approved, and that the insurance be extended to cover all accidents of every description."

Mr. HOBSON seconded the motion, and before sitting down said he thought a word should be said regarding Capt. Tredinnick, the resident agent, who was deserving of the warmest thanks of the shareholders. (Hear, hear.) He had a peculiar knowledge of the district, and pursued the work with very great energy and success.

Col. SANFORD asked whether there was any difficulty in getting the insurance company to pay when they became liable?——Mr. MICHELL replied none at all. The insurance company had always met all claims upon them most promptly, and not only had they paid strict legal claims, but he knew of cases where they had paid compensation for deaths from accidents which were not strict legal claims. (Hear, hear.)

The resolution was put and carried unanimously.

A SHAREHOLDER proposed that the cordial thanks of the meeting be presented to the committee, and that they be re-elected. He referred to the satisfactory manner in which the business was transacted in the office, and to the *esprit de corps* which characterised all their proceedings.

Mr. S. PAYNE, in seconding the motion, said he was sure the gentlemen who composed the committee would thoroughly fulfil their duty. He fully endorsed all that had been said regarding the Cost-book System. He had been connected with Limited Liability companies, and in every one of them he had been made to smart, and had to pay the piper. (A laugh.) He was glad to hear Captain Tredinnick's name mentioned, because he could bear his testimony to the hard work which Capt. Tredinnick performed, and to the thoroughly reliable and efficient way in which he always discharged all his duties. (Hear, hear.) For his own part he fully believed that the shareholders would be well satisfied with their investment in Wheal Coates.——The resolution was put and carried unanimously.

The CHAIRMAN proposed a vote of thanks to the officers.

A SHAREHOLDER seconded the motion, which was put, and carried with great cordiality.

On the motion of Mr. J. B. REYNOLDS, seconded by Dr. MAYBURY, a cordial vote of thanks was passed to the Chairman for his able and courteous conduct in the chair, and the meeting broke up.

THE NEW REDMOOR MINING COMPANY.

A meeting of the directors and shareholders of this company was held at the mine near Callington, on Tuesday, May 16, for the purpose of starting the drawing-engine, and inspecting the pumping-engine and machinery in course of erection.

The drawing-engine was made by Messrs. Vivian, at the Tucking-mill Foundry, and was previously at work at Wheal Crenver, before it was purchased by the New Redmoor Mining Company. It has a 30-inch cylinder. The engine was started, and a kibble filled with attle from the shaft was drawn up. Some good stones containing copper, arsenical mundic, and tin, which had been drawn from the shallow levels, were seen and examined.

The shareholders then inspected the 80-inch pumping-engine which is being erected, and the new house which has been built for it. This engine was made by Messrs. Harvey and Co., of Hayle, for the Gellygaer Colliery, in South Wales, 10 years ago, and it was purchased for the Redmoor Mine when the machinery and plant of that colliery were sold off. They then inspected the new pitwork which is being delivered on the mine from Messrs. J. Mathews and Co.'s Foundry at Tavistock, and the newly erected boiler-house containing five large Cornish boilers, one of which is already working, and the others are all set and nearly ready for work. A visit was afterwards made to the Holmbush Mine for the purpose of inspecting the machinery and the work going on there. There is an 80-inch pumping-engine, two drawing-engines, and an engine for driving the boring machinery. It is being worked at present down to the 120 fm. level. After seeing the machinery at work, the shareholders present paid a visit to the dressing-floors, where there was a large quantity of arsenical mundic, copper ore, and a small quantity of silver-lead ore in course of treatment.

After the inspection was concluded, the directors and shareholders assembled at Mrs. Golding's Hotel, at Callington, where a luncheon was provided, Mr. DAVID SYKES (the Chairman of the two companies) in the chair. After the usual loyal toasts had been drunk,

The CHAIRMAN said, in proposing "Success to the New Redmoor Mine," I shall combine with it that of Holmbush, seeing that the shareholders of Holmbush are mostly identical with the shareholders of Redmoor. I must first give you an account of how these mines came to be worked, and the reasons which induced us to take them up. We first made enquiries as to whether the minerals, which they have hitherto been famed for producing, had been found in sufficient quantity to justify us in re opening them, and erecting the machinery necessary to work them, so as to make them pay. In order to ascertain this I took the opinion of those I thought best calculated to know concerning them, and afterwards, in order to satisfy myself of the correctness of that information, I went to the Stannaries Court at Truro, and there I obtained the returns of the ores, upon which dues had been paid, and which I had afterwards confirmed on reference to the sales of ores in the *Mining Journal* of that date. I also received further corroboration from the records of the Mining Museum, in Jermyn-street, London. I felt this was the safest course to adopt, and these returns have already been placed before the shareholders in both mines, and I think all of you will concur with me in saying that they were such as to justify the course of action we have pursued. Our first business at Redmoor was to put up such machinery that would be lasting and durable and not likely to break down. From your inspection to-day, I feel sure you will agree with me that we have so far completely and economically succeeded, the whole of it being of the most substantial and best possible character, and we were very fortunate in obtaining most of it at a very low price, especially the two engines for pumping and drawing respectively, and four of the boilers. To-day the drawing-engine has been officially started, which is the first step in the process of our drawing from the Redmoor shaft, though we have had miners stoping the great tin lode at the 40 and 50 fm. levels for some time, and have now a large quantity of the lode ready for sending up the shaft, so soon as we can spare the kibble and drawing engine for that purpose. I must not, however, go into minute details as that would trench upon Capt. Bennett's special business, but I believe in Redmoor we have a very fine mine, and also at Holmbush. Although large quantities of ore have been returned from both mines, I am convinced they are yet in their infancy; for it is a well ascertained fact that the lodes have gradually improved as depth has been attained, and they are richest in the bottom levels, which makes us anxious to get there as speedily as possible. In addition to their comparative shallowness, we have a great length of virgin and unexplored ground on the course of the various lodes, and we have every reason to believe the lodes in this ground will be as productive as they have been in the ground that has been taken away, and which has yielded the large returns of ore previously alluded to. We have also the Kelly Bray sett included in the Holmbush lease, and that of South Kelly Bray in the Redmoor lease, both of which I have no doubt will be important additions when we are in a position to work them properly. I would now urge not only those miners who are present and pecuniarily interested as shareholders, but every person we employ to second our efforts; and if this is done with the co-operation of the whole body of shareholders, I am firmly of opinion those efforts will be crowned with abundant success, which will not only benefit the adventurers, but be a lasting boon to the district of Callington. I, therefore, cordially ask you to drink to the toast of success to both the mines—(cheers)—and I call upon Capt. Bennett to respond.

Capt. BENNETT: Mr. Chairman, I quite agree with the remarks which dropped from you just now as to these mines being in their infancy. I believe that most of you present this evening have known them for many years, and that they are looked upon as good sound speculations. I have lived in this district for the past 10 years, and during that time have picked up sufficient information about them to satisfy me as to their value. I believe that in these mines we have two of the best mines in the eastern part of Cornwall. Many of the mines in Cornwall live solely on tin, but in Redmoor we have not only tin in large quantities, but also lead, copper, and arsenical mundic in addition. As most of you are aware, the copper and tin lodes are east and west lodes. These lodes are all intersected by the lead lode, which is a north and south lode, and has been very productive for silver-lead. I do not think a better proof of this could be got than the fact that most of the lode has been worked away from the surface to the present bottom of the mine. There are two parallel lodes in Redmoor, known as Johnson's Tin Lode and the Great Tin Lode. These two lodes run through the whole length of the sett—about three-quarters of a mile. The Great Tin Lode underlies north, and has not been worked upon to any great extent except by the ancients from the surface as deep as the water would allow them, and the little that has been since done upon it shows it to be a large and very productive lode. Johnson's Tin Lode, which is to the north of the Great Tin Lode, underlies south. Comparatively little also has been done on this lode, and we have commenced to stope on it at the 40 and 50 fm. levels, and find the lode contains tin of good quality, mixed with arsenical mundic and copper ore. You have seen a few kibbles drawn to surface to-day with some very fine stones of tin and copper.

As far as I have seen the lode I like its appearance extremely well. I wish now to draw your particular attention to this transverse section (pointing to a map). This shows the relative position of the Great Tin Lode and Johnson's Lode. You will all see that according to the underlay of these two lodes that they will form a junction about 15 fms. below the present bottom of the mine. I am quite sure I know what the miners present think of this junction. They would have much pleasure in taking a pitch at a very low tribute if they could get there, and I am also quite sure that they would be well paid. (Cheers and general assent on the part of the miners.) Another very important feature connected with this junction is the point where both lodes will be intersected by the lead lode. The riches we shall find there where these three productive lodes come together I would not sell for a trifle. As I have already stated, the lead lode has been worked away from the surface to the 125 fm. level. There are miners present who have worked in the bottom of the 125 on the lead lode, and who state they worked there half way up to the waist in water, shovelling up lead ore from the lode below the water level. I will call attention to another matter. Johnson's engine-shaft is sunk perpendicularly to the 125 or 135 below surface. This perpendicular shaft goes through the lead lode in the 70, and instead of following the lode in sinking, as the former workers should have done, and which would have opened up the lode as they went down, they continued to sink the shaft perpendicularly (as shown on this section), at a cost of about 40*l.* per fathom, and then at every 10 fms. in depth they had to drive cross-cuts of increasing length in order to intersect the lead lode. Each 10 fms. sinking and cross-cutting would occupy from twenty months to two years' time. You must understand, also, that all this work is done in unproductive country rock, and no returns obtained from it until the lode is reached by the cross-cut from the shaft. When the former workers got down to the 125 they discontinued the further sinking of the shaft, but continued for six years afterwards to stope away the lode in the various levels right down to the bottom of the mine. I would remark that it would have cost them 1000*l.*, and would have taken them two or three years to sink the shaft another lift and cross-cut to the lode. Having exhausted their reserves of ore on the lead lode by the above mode of working, and seeing that it would take them at least two years before they could sink another lift and open up another level, they were unwilling to incur the expense, and decided to stop working. Now, gentlemen, we propose to work the mine on an entirely different system. If you look at this transverse section (pointing to maps) you will see the lead lode crosses the shaft in the 70. We propose making our shaft from this point through the workings on the lead lode to the present bottom of the mine, in the 125. We shall then commence sinking below this level, not in the country rock or by the side of the lode, but on the lode, and I have no doubt the lode will pay the expense of sinking, and we shall be able to sink 30 fms. in this way of working in as short a time as it would take in the old way of working to sink 10 fms. perpendicularly, and drive the cross-cut to intersect the lode. After we have sunk the shaft 15 fms. on the lead lode we shall commence driving on the lead lode north and south, and in so doing we shall open up valuable ground for stoping on the lead lode, and also intersect all our east and west lodes—five, at least, in number—and in addition, we shall reach the point of junction I have already referred to. Another very important thing is the great cross-course passing through the sett. The Holmbush, Flap Jack, and Kelly Bray lodes have proved to be very productive immediately adjoining the cross-course, especially on the eastern side. None of the east and-west lodes in this mine have been seen east of the cross-course with the exception of the lode known as the Kelly Bray lode, and which produced large quantities of copper ore. What we propose to do is to take up our levels on the various east and west lodes, and drive east so as to get the other side of the great cross-course, where we expect to get the same results as were obtained in Kelly Bray and Holmbush. I assure you I have every confidence in the mine, and I expect it will prove a lasting and profitable concern. We have taken great care to provide everything necessary to work it as deep as any mine in Cornwall as regards the strength and durability of the machinery. Our engine has sufficient power to go to a very great depth, and we have also a splendid drawing engine, capable of bringing up any amount of stuff. We have pumps and everything new and in first-class style. Our main rods, plates, &c., are equal to any in Cornwall. As soon as the present bottom of the shaft is reached we shall at once fix a skip-road from the surface to the 125, and by which our men will be enabled to ride up and down instead of climbing the ladders. When this skip-road has been put in the men will be able to get rapidly down to their work, and work their eight hours, and when they have finished they can be brought as quickly again to the surface. The miners here know what a thing it is to have to climb 120 fms. of ladders after having been down seven or eight hours, and the greater part of their strength having been expended in their work. Being brought up to the surface in the skip will be a great advantage to the men and a great saving to the mine. I would again say that I have very confidence that all our hopes and anticipations in Redmoor Mine will be fully realised, and that it will prove a very prosperous mine and that we shall have the pleasure of meeting the shareholders here again not only to dine together but to congratulate them on receipt of cheques for their dividends. Before I sit down, as most of you are also interested in Holmbush Mine, with which Redmoor is so closely connected, I will just call your attention to two or three points. I have here the working section of Holmbush Mine (points to map), which I have found to be quite correct down to the 120, our present bottom, and it agrees below that point with the testimony of those who formerly worked in the lower levels down to the 175, or bottom of the mine. I would just call your attention to the Holmbush lode. At the adit level you will observe that the length of the productive part of the lode is 100 fms. At the 60 it is 150 fms. in length. I wish you to bear this in mind. At the 100 it is 180 fms. in length, and at the 160 it is 260 fms. long. Does that show signs of falling off in depth? No; quite the reverse. This mark (pointing to map) is called ironstone, and consequently the lode at this point—the 120—became rather small, but immediately under this ironstone at the 132 the lode again opened up to its usual size and richness, and increased in length more than 60 fms., and the prices realised for the copper ore taken away varied between 14*l.* and 23*l.* per ton. The lode continued very rich right down to the 175, or present bottom of the mine. You will see from the section that the lode has been very productive also west of the engine-shaft. From the back of the 160 to the 145, and west of the lead lode, just that little piece of ground (pointing to plan) produced 10,000*l.* worth of copper. I would now call your attention to the engine-shaft, which is sunk perpendicularly from the surface to the 160. This shaft passes through the Holmbush lode at the 90. The Holmbush lode is 40 fms. north of the shaft at the 150. The great mystery to some is why this mine stopped. I think if you follow me in my remarks you will see that it was impossible for the mine to go on much longer in the then prevailing mode of working. As I have already stated, the shaft was sunk perpendicularly to the 160. The further sinking of the shaft was discontinued. I have already shown you that the length of productive part of the lode at the 160 was 260 fms. in length. They found that in order to sink the engine-shaft another lift and to drive a cross-cut north to intersect the lode an outlay of over 1000*l.* would be required, and the work would take between two and three years to accomplish. The same remarks I made about Redmoor apply equally well to this mine. The same mistake was made in continuing the shaft perpendicularly, involving the great loss of time and the great expense of increasingly lengthy cross-cuts to reach the lode. I find in the bottom of the 160 there have been seven winzes sunk as deep as the 175, and the 175 has been driven for a distance of over 140 fms , and you must bear in mind that all the stuff in driving this level had to be drawn by hand labour up to the 160. The water had also to be kept by means of hand pumps. There has been fully 500 fms. of ground stoped below the 160; all this stuff had also to be drawn up by hand labour. It must be clear to you now that this must have been very expensive. There are men in this room to-day who were paid 10*l.* per fm. for stoping ground that, if the shaft had been brought down to this level and the level opened up properly, would have stoped the same ground for 2*l.* 10*s.* per fathom. (Assent by the miners present.) The fact is that gold ought to have been raised instead of copper to pay for working in this way. At the same time, it goes to prove that they must have had a rich lode to have worked it at all in this fashion. At a distance of 120 fms. west of the shaft at the 160 you will see a winze sunk to the 175 and the level driven east and west of that winze for 20 fms. in length. The ground is also stoped east and west of the winze. There is another winze also sunk below this point, and the ground stoped both east and west of the same. This is the deepest point in the mine, and is worth for copper at least 30*l.* per fathom. I would remark here also that the stuff from this point had to be drawn by hand labour to the 175 first and then by hand labour again to the 160. The water also had to be pumped up by hand labour in the same way. I would ask what could possibly be expected to pay under such circumstances? There can be no doubt as to the great value of the lode, but as the ore had all to be drawn up by hand labour, and the water pumped by hand labour, it cost quite 10*l.* for doing 50*s.* worth of work. I need not say that we do not not intend to work the mine in this way. We propose making a diagonal shaft on the course of the lode from the 90 to the bottom of the mine. We shall have finished this shaft from the 90 to the 120 in about a month's time, and we shall continue the cutting down of this shaft to the bottom or the 175, as before stated. When this is completed the sinking of this shaft deeper will be continued on the course of the lode, and as depth is attained various lodes will be started both east and west, and large returns of copper may be expected of rich quality. We propose to put in a double skip-road to the very bottom of the mine, when we shall be enabled to draw a very large quantity of stuff, and the skip-road will also be used to lower our men into the mine, and to raise them to the surface after they have done their work. By so doing I am perfectly certain if 100 men could break 400 tons of ore a month and climb to the surface the same number of men will break at least 500 tons if lowered and raised by the skip, and the necessity for climbing done away with. By this means the men themselves will earn more money, and it will be of great advantage to the welfare of the mine. The Flap-jack lode, as you will see by the plan, is about 70 fms. to the south of the Holmbush lode, and is reached by cross-cuts from the Holmbush lode. This lode has also been very productive for arsenical mundic and copper ore. Those gentlemen who have been to the mine to-day have seen some splendid stones of copper ore and arsenical mundic from the 110 and 120, on this lode at the engine-shaft. Mr. Warington Smyth speaks very highly of this lode in the 145. I believe that the copper in the 145 is of better quality than from any other level. We are also driving the 70 east on this lode by boring machines into Kit Hill; the lode is large, containing a little copper and mundic, with indications of further improvement. When the junction of the killas and granite is reached I have no doubt a very productive lode will be found. In addition to these two lodes we have a very large and splendid lead lode. There have been tens of thousands of pounds worth of silver-lead sold from this lode in this mine. We have commenced to drive the 120 south on this lode; the lode is large, and yields good stones of lead. You have seen a stone of about 10 lbs. weight brought up from this level to-day of silver-lead ore, and there is every appearance of a speedy improvement. We have over 100 fathoms of virgin ground on this lode between this point and Redmoor Mine, which I have no doubt will prove very productive for lead, but when we get down to where the water is on this lode we shall find rich courses of lead. There is a miner in this room to-day that will work some of the ground at a tribute of 5*s.* in 1*l.* for lead, and would do well on that tribute; in fact, there are many here who would gladly do so. (Assent by the miners present.) Now, gentlemen, with a little more patience and a little more money we shall get to the bottom of these mines, and be enabled to open up the various lodes in a miner-like way, and very large returns of copper, tin, and silver-lead will be made, and the mines prove a very rich property to the shareholders, giving them large profits for very many years to come.

Mr. GEORGE WHIFFIN: I rise for the purpose of proposing the toast of the absent shareholders. I am very sorry that all the shareholders are not present to-day to have had an opportunity of inspecting the mines. The circumstances of these companies are such that the directors have nothing to conceal, but desire that the shareholders shall have as much information as themselves. It is impossible for any information to be conveyed by reports which would be so valuable as a personal inspection of the mines by the shareholders themselves. The directors have every confidence in the future of the mines, but it is likely that more money and a little more time will be required to develope them than was originally contemplated by the directors. It will, of course, be a great misfortune for the subscribed capital to be wholly expended before the mines are opened to the point where the directors feel assured success will be attained, and the directors consider it would be unwise that the whole of the present subscribed capital should be called up, as it is always desirable to have a reserve. It would have, therefore, been very gratifying if a much larger number of the shareholders had been present, so that they could have formed their own impressions and drawn their own conclusions, and the result would probably have been that they would have expressed their desire of co-operating with the directors in increasing the subscribed capital. Speaking for myself, I have no hesitation in saying that I have the greatest confidence in the mines proving a great success when sufficiently developed, and also that the return will be of a lasting character. With these few remarks, I beg to offer to your notice the toast of the absent shareholders, coupling with it the name of Mr. Low.

Mr. LOW, in acknowledging the toast, regretted that more of the shareholders had not attended. He was very much pleased with his visit to the mines, the extent of which he was very much surprised at. He was pleased to see the progress which had been made, and at the next general meeting he would be very pleased to give the shareholders his opinion as to the probabilities of their success.

The CHAIRMAN then called upon Mr. Mathews.

Mr. WILLIAM MATHEWS, the engineer of the company, said he could hardly throw much information on the mine after the elaborate and exhaustive description given by Captain Bennett. He had lived 45 years in the district, and had seen at both mines very considerable quantities of minerals, both of lead and copper, and certainly at Holmbush there were piles of ore of very rich quality. He knew very well the cause why the mine was abandoned, a winze had been sunk for 15 fathoms through which the water had to be pumped by hand labour and the ore drawn up in the same way. There is no mine that could stand working on that system and live. Some little time before a shaft following the lode was begun, in order to open up the mine properly, but there came a change of administration and the work was stopped, and all the ore taken away, and there were a few of the knowing shareholders who went out at a very considerable profit, and left the others to find the means to further develope the mine. They decided, however, not to go on, and the machinery was sold and the mine abandoned. I believe that the machinery now being erected at Redmoor, with the pitwork and pumps, will be sufficient to fully develope the two properties. The engine is a very fine one, and will, I believe, give every satisfaction. We shall keep these mines free of water and at very small cost. I do not think that too much can be said of the working of these two mines together, and the saving of cost to be effected thereby. I certainly think the present directors have shown a great deal of judgment and a great deal of courage. I feel that if Holmbush could not be worked to a success by itself, I am quite sure it will be attained by means of working the two together. I feel quite convinced that with proper development and management the mines can be made productive, and a good return obtained for the capital laid out. I cannot say more, not being myself a miner; I cannot tell you what is underground, but still I have every confidence that we have a very fine property if properly and judiciously developed, and the present directory deserve full credit for what they have done.

Mr. RENDELL, merchant, Callington, said he had taken some interest in Holmbush and Redmoor Mines. He had spoken to many who were well acquainted with them and he never heard but one opinion of them, and he felt satisfied of their being made a success.

The CHAIRMAN said there was one important matter which he should have mentioned, and that was the dues. The original royalties in Redmoor and South Kelly Bray were 1-20th, but I fortunately induced the respected agent of Lady Ashburton to grant us dues of 1-36th upon new leases for a term of 21 years on certain conditions in my judgment favourable to both lessors and lessees. I am sorry Mr. Rogers is not with us to-day, but I received a telegram from him wishing us all success.

Mr. ANDREW proposed the health of the miners, and reminded them that the interests of the shareholders were the miners interests.

Mr. WILLIAM PEARCE, in response, said he had worked in Redmoor Mine from the commencement up to the finish of the previous working. There is an extent of ground on the lead lode of over 200 fms. in length north and south, from which there was raised of silver-lead ore over 100 tons a month, which realised 2000*l.* in cash. I worked in the bottom level as far as the water would let me. Captain Wilcox told me they should have sunk the shaft. From the appearance of the lode and strata of ground there is every probability that the lead lode will prove equally as productive below the present bottom of the mine as it was in the levels above. I think it will be better, if any change at all. But the shaft was stopped about five or six years before the mine actually stopped. They worked upon some valuable lodes, but they were always looking forward to Holmbush knocking, on account of their being so much water there, and after a time it did knock, and drove them from the levels. With regard to the great south tin lode, he believed it to be the best lode in the district.

Captain BENNETT: Where do you think the present shaft is covered? Mr. PEARCE: At the 80. I covered it myself. I should hardly think it will have fallen in. There may be some timber across. Our great object now is to get the Redmoor shaft clear. The break in the shaft is not very far down from where you are at present. I stoped on tribute at 7*s.* 6*d.* in 1*l.*, upon which I earned good wages.

Captain VERRAN, in offering some remarks upon the mines, said he must go back 45 years, to the time when he first came to Redmoor—in 1837. He came from West Cornwall to erect a water-wheel, and was afterwards engaged in sampling the lead, and preparing it for market. He left to proceed to America. He came back again to Redmoor in 1844, and continued for about five years, during which time a 60-in. engine was put up. He applied and got into the office of old Mr. Peters', father of the present clerk to the magistrate, who was the purser. He was with him two or three years. He made up all the returns as to lead, and 100 tons a month was returned for a very long time, the average price which it realised was 20*l.* per ton. The cost per month was about 160*l.*, and the returns 2000*l.* or over. The lead lode was very rich, we had also returns of copper near the Court House shaft. From Redmoor he went to Holmbush, where he continued for 15 years, right up to the close. He had to make up the parcels of copper ore. He carried out from the bank to the mine 150,000*l.* to pay the men. The cost was more than 900*l.* per month, besides merchants' bills. There were some men who had pitches which produced in two months 40*l.* a month clear to them. The men instead of working only eight hours would work from six in the morning till nine at night. They would take a pitch at 10*s.* to 13*s.* 4*d.* in 1*l.* for two months, and in one month, or perhaps not more than a fortnight, they would get into a large bunch of copper which would give them splendid wages, but the next time they had to take 2*s.* 6*d.* in 1*l.* There was nothing like tribute for the men, and it was the best system. If you want to develope a mine in my opinion there is nothing equal to tribute.

Mr. HOOD, of Reading, said he was a stranger here, but he had been very much interested in the remarks which had been made by Captain Bennett, and by the miners. He had formed a very good opinion of the venture that was before them. He wished to call attention to the difficulties which the chairman and directors had experienced. He sincerely hoped and trusted that the mines would be a great success for all, and he begged to propose the health of Mr. Sykes

Mr. SYKES: I hardly expected this toast being proposed at present. I can only say I am exceedingly obliged to Mr. Hood and to you for the hearty manner in which you have responded to it. When I undertook the starting of the Holmbush Mine originally, I did not shrink from putting my own money into it. I believed from the enquiries I made at the first that it was a good thing, and after satisfying myself on that head, I took a large number of shares, and I intend to hold them. I also ventured to suggest to several of my friends to do likewise. Shortly after starting Holmbush, I became aware of the desirability of acquiring Redmoor, but I think both Captain Bennett and Mr. Emmens will bear me out that I was very reticent about it until the proper time, and I believe before I said anything definite to them about buying their interest in the mine, and that of Mr. Coath, that I had taken care to secure the terms of 1-36th dues. I can, however, assure you that these two mines have been a matter of great concern to me, and has caused me a great deal of worry and anxiety; but if my health is spared, I intend to do everything in my power with the view of bringing these mines to a great success. I have been very ably seconded by Capt. Bennett and Mr. Emmens, and I rely upon you and the general body of shareholders giving us that support which is so necessary to ensure your success, which will necessary be our own success also. We have every reason for believing that we have valuable reserves in both these mines, which time only can disclose. We have obtained the best possible machinery, and have put it in thorough repair, in order to be as free as possible from any chance of a breakdown. The winding engine is working most satisfactorily, and it will no doubt continue to do so for a considerable length of time without the necessity of stopping, except for connecting the capstan. With regard to the four 13-ton boilers, they were practically a gift, costing only 70*l.* each, exclusive of carriage. Everything considered, we have been enabled to obtain our machinery in such a way as to give us great encouragement for the future. I think you have all of you, both my colleagues on the board and the agents and assistants, also your miners, encouraged me in such a way that I trust we shall continue to work in a spirit of harmony for the best interests of the company and the mines.

Mr. NICHOLS, solicitor, of Callington, said he had very much pleasure in meeting the directors. He referred to the necessity of the mines being worked in thorough harmony between employers and the employed, and with due regard to the rights of the miners, as this caused the men to take a special interest in the mines. He thought Capt. Bennett was rather hard upon the old men, seeing that he was going to benefit by their mistakes. He was very glad to find these mines resuscitated. It is well known that the deepest mines are the best, and there is every reason to believe that they would prove richer the deeper they were worked. With regard to the proposed railway to Callington he thanked the Chairman for the valuable assistance which he had rendered to the project in his evidence before the Lords Committee, and he thought the railway would be of great service to these mines (in fact it was the present mineral railway which kept the mines in the district going now). He wished that more shareholders had attended to-day to back up these two mines, but no doubt the distance prevented them from coming. He hoped, however, to see the time when they would be able to come down and return the same day. He begged to propose the health of Capt. Bennett and Mr. Emmens.

Capt. BENNETT, in responding, said he had done his best in superintending the erection of the engines, and in carrying out the various works both at surface and underground in the mines, and he had been assisted most wonderfully. He took to himself credit for having courage and energy, two qualities which were wanted to carry through any business, but more especially that of a mine, in order to overcome the difficulties. With regard to the men he tried to pay them properly for the work which they did, and he believed in giving them long contracts.——Mr. EMMENS also responded.

WM. PEARCE, jun., stated that he first worked in the mine about 30 years ago. When a boy he worked underground. He worked in the 125, keeping the water out as well as he could, but was driven out ultimately by it. It was the opinion of the men then that if the shaft was only sunk, and another level made, it would prove as rich below as the levels were above.

Captain COLLINS said he had travelled 35 miles to be present at this meeting. He had known this locality for something like 40 years. He spoke as to the very productive character of the lodes in Redmoor. He believed the time would come when the miners from the Caradon Hills and Kit Hill would meet and shake hands together. As a shareholder he would contribute to Redmoor, and he hoped the work would be carried out in a miner-like way. He believed they had a good engine, a good property, and a good manager, and he did not hesitate to say that the mine will become one of the best paying mines in East Cornwall.

HENRY SKINNER said in reference to the Holmbush Mine he worked on the Holmbush lode from 1864, in the 160 fm. level, where there was a very rich lode of copper.

JOHN PARSONS said in reference to Holmbush he had worked in the mine for upwards of 20 years. He traced the lode from the top to the bottom. Most of the time he worked on tribute, and got a good deal of money, as the deeper he went the ore got richer. He got 33*l.* 10*s.* per month. He worked in the 175, going west, where there was a splendid lode. The lode there was worth 30*l.* per fathom, and some calculated it was worth from 40*l.* to 50*l.*; this was a very rich piece of ground. For 25 to 30 years he worked in the bottom part of Holmbush, and continued to work in other places. When he left it the lode was about 3 ft. wide, and proved the best lode in Cornwall.

JAMES TRAISE had worked in the bottom of the 165 fm. level at Holmbush, where the lode was of very high produce. He was one of the last men to work there. The lode in the bottom of the 165 was 2½ ft. wide.

JOSEPH ALLEN said he had worked on the lead lode in Holmbush for 25 years. From the 100 down to the bottom, and in the bottom of the 132, there is a splendid lode. He worked shovelling the ore up from under water. He could not see it, being so much under water. It was a beautiful lode.

Captain BENNETT said they were now at the 120, driving on the lead lode, and enquired whether they thought they would soon meet with anything? Mr. ALLEN in reply stated that there is a hard bar of kann, and as soon as you get through that you will get into good lead. It makes 8tgs of lead now. He worked in the bottom of the 130 and in the 140 under water. In reply to Capt. Bennett's question—at what price would you take a pitch there? Mr. ALLEN said at 5*s.* in the 1*l.*, and I would get good wages at it. The lead contained silver, for which, however, he would get nothing. He brought up a stone of silver-lead ore weighing 9 cwt., which was sent to the Exhibition of 1851.

Captain VERRAN said he was there when they were working in the 154 on the Flap Jack lode, the produce of which was 14½ per cent. for copper.

Mr. WEAKLIN proposed the health of Messrs. Joseph and William Matthews. They were strangers to him until to-day, but he hoped to know more of them in future. He was very pleased with his visit to the mines, and very gratified with the appearance of the miners.

Mr. WILLIAM MATTHEWS, in responding, referred to the substantial and satisfactory character of the machinery which had been erected on the mines under his superintendence as engineer, which he considered had been purchased at a very low figure, and erected as economically as possible.

Mr. JOSEPH MATTHEWS also responded.

[For remainder of Meetings see this day's Journal.]

COPPER ORES.

Sampled May 3, and sold at the Royal Hotel, Truro, May 18.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Great Consols.	112	£1 9 0	South Caradon	56	£3 13 6
ditto	101	0 15 6	ditto	54	8 4 0
ditto	100	0 13 6	Gunnislake	105	5 7 0
ditto	99	0 13 6	ditto	104	4 19 0
ditto	91	0 16 6	ditto	94	6 0 6
ditto	90	1 2 0	Marke Valley	64	2 2 6
ditto	86	1 0 0	ditto	45	3 2 0
ditto	80	1 0 0	ditto	44	2 1 0
ditto	78	1 0 0	ditto	2	13 13 0
ditto	53	5 12 6	West Caradon	59	4 4 0
ditto	20	6 5 0	ditto	48	5 5 0
South Caradon	90	4 16 6	Gawton Copper	70	0 13 0
ditto	87	2 18 0	Bedford	60	4 0 0
ditto	83	3 6 0	Phœnix	33	5 11 0

TOTAL PRODUCE.

Devon Great Con.	907	£1246 11 0	West Caradon	93	£ 462 0 0
South Caradon	370	1609 1 0	Gawton Copper	70	45 10 0
Gunnislake	303	1642 18 0	Bedford	60	240 0 0
Marke Valley	155	393 0 0	Phœnix	33	210 13 0

Average standard ..... £103 16 0 | Average produce 5⅓
Average price per ton £2 18 6
Quantity of ore ..... 2001 | Quantity of fine copper, 109 tons 7 cwts.
Amount of money £5849 18 0

LAST SALE.—Average standard, £ 96 18 0 | Average produce 6
Standard of corresponding sale last month, £ 99 19 0 | Produce, 57⅓

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Name.	Tons.	Amount.
Vivian and Sons	349½	£ 534 18 0
Grenfell and Sons	304	573 13 6
Nevill, Druce, and Co.	360½	793 17 6
Williams, Foster, and Co.	340	651 19 0
Mason and Elkington	83	0 0 0
Charles Lambert and Co.	567	3295 10 0
Total	2001	£5849 18 0

Copper ores for sale on Thursday, June 1, at Tabb's Hotel, Redruth.—Mines and parcels—Mellanear 510—West Wheal Tolgus 161—West Wheal Seton 54—West Wheal Basset 9.—Total 734 tons.

CORNISH PUMPING-ENGINES.—The number of pumping-engines reported for April is 15. They have consumed 1406 tons of coal and lifted 100 million tons of water 10 fms. high. The average duty of the whole is, therefore, 48,100,000 lbs. lifted 1 ft. high by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Cook's Kitchen—55 in.	Millions	43·6
Mellanear—76 in.		55·2
West Basset—Grenville's 70 in.		51·3
West Basset—Thomas's 60 in.		52·8
West Tolgus—Richard's 70 in.		53·6
West Wheal Seton—Harvey's 85 in.		60·1
West Wheal Seton—Rule's 70 in.		55·6

THE ELECTRIC LIGHT IN WORKSHOPS.—Messrs. Robey and Co., of Lincoln, write—"Referring to the account of the Edison electric light in Salford, in which it is stated that this is the first application of the kind in England, we may state that this was evidently written in ignorance of the fact that in our foundry in Lincoln not only has the Brush electric light been at work for the past two years illuminating the workshops, but during the greater part of last winter our large fitting shop was entirely illuminated by incandescent lamps on the Edison system."

FOREIGN MINING AND METALLURGY.

There is little change to report in the tone of the Belgian coal markets. The aspect of affairs presents little animation; news is scanty, and there is scarcely any variation in quotations. Deliveries continue fairly active, nevertheless there are small stocks at some of the pits' mouths. Manufacturing industry continues to consume rather important quantities of coal, and the demand for domestic qualities is slightly reviving, as merchants are laying in supplies now that prices are low. There is scarcely any change to report in the German coal trade. The aspect of affairs continues feeble, but deliveries have, nevertheless, been fairly well maintained. The attention of German colliery proprieties is now directed to the St. Gothard Tunnel, as they hope by the new route to compete successfully with English coal upon the Italian markets. The deliveries of German coal to Holland in the first four months of this year amounted to 68,003 tons, as compared with 72,732 tons in the corresponding period of 1881, showing a falling off of 4429 tons this year. The deliveries of German coal to Belgium also show a reduction of 4428 tons in the first four months of 1882. Upon the whole, the exports of German coal declined to April 30 this year to the extent of 27,481 tons, as compared with the corresponding period of 1881; this is equivalent to a reduction of nearly 20 per cent.

The Belgian Government having approved an adjudication of plant which took place April 26 a certain animation has prevailed in the Belgian iron trade during the last few days. Business has been done in iron and plates to a rather considerable extent during the past week, and this has imparted a little firmness to the general tone of business. Notwithstanding this there have been complaints that orders have not come to hand very freely, while employment is far from being general. English pig has continued to be quoted in Belgium at 2*l.* 8s. per ton, but a reduction of 10d. per ton would be made in the case of contracts of some importance. The business reported to have been done in iron in Belgium upon Chinese account does not appear to have been carried through; at one time it had been considered indeed at an end, but negociations have been recently resumed. Plates have been dealt in in Belgium at 7*l.* 8s. per ton, but some works have accepted 7*l.* 4s. per ton; the general average would probably be found to be between these rates. Contracts have just been let for trucks for the Belgian State railways; the Metallurgical Company has undertaken to supply the larger number of these trucks, having taken sixteen lots of 50 trucks each. The remainder of the adjudication has been shared among different firms, among whom we may mention MM. Nicaise and Delenoe, who have taken four lots. The prices at which the lots were taken showed a slight reduction as compared with the last previous adjudication. Contracts have just been let for the construction of the first section of the Canal of the Centre, which will unite the Mons and Condé Canal to branches of the canal from Charleroi to Brussels.

Paris iron merchants continue to sell at rates which are not considered *en rapport* with the quotations firmly maintained by forgemasters. Thus, at Paris business has been done in merchant's iron at 8*l.* 4s. per ton, while the works require 8*l.* 4s. per ton delivered. This is an anomolous state of things, and merchants will very shortly have to advance their terms unless they can secure easier rates from works; this latter alternative is not probable in presence of the considerable orders which ensure employment to the forges of the Nord for several months to come. Some adjudication of old rails have taken place in France at about 4*l.* per ton. The German iron trade has continued somewhat weak, most descriptions of metallurgical products being neglected. Iron in bars has been inactive; a nominal quotation of 7*l.* per ton has been maintained, but business has been freely done upon lower terms. The German steel works have still plenty of employment. The Oberbilk Steel Works Company has secured 1816 axles at Strasbourg for the Alsace and Lorraine Railways; the contract price was 13*l.* 9s. 4d. per ton. As German ironmasters see that prices are falling they are concerting measures to check the decline. The blast furnace managers of the Rhenish Provinces and Westphalia have, for instance, combined with their Nassau neighbours, and have decided to reduce their production to the extent of 10 per cent. The makers of bars and puddled iron in the Dortmund district have also formed a syndicate with a view to a diminution of their production.

VENTILATING AND EXTINGUISHING FIRES IN MINES.

As an improved mode of ventilating and extinguishing fires in mines, Messrs. ONIONS and TOOTH, of Rotherhithe, propose the application and arrangement of certain machinery so constructed as to effect a sufficient vacuum to exhaust from the working of any mines all inflammatory gases, vapours, choke damp, and so forth, and thereby also produce a current of air in the workings, productive of health and comfort to the workmen. They fix a cistern near the bottom of the upcast shaft or any other suitable place, as the case may be, with branch pipes leading from the various workings where foul air or gas, or any noxious vapours, exist or are likely to accumulate, having a kind of hopper mouth at the end of each pipe where necessary for the more easily receiving of the vitiated air into the pipes so connected with the tank, to which they would attach a large air pump (to be worked by a steam engine or engines), with inlet and outlet valves of such dimensions as to relieve the engine of a vast amount of pressure, and also produce a vacuum in the tank sufficient to exhaust any amount of gas that is likely to engender in the workings, and of course cause a fair flow of fresh air through the mines; the exhausted gas is to be discharged through the outlet valves of the pump through a large tube into the bottom of the upcast shaft or other suitable place.

By the means of the air pump with branches and pipes therefrom, they cause the air or gas to rush into the said pipes immediately from the spot or place where it exists, and so pass into the cistern, where a sufficient vacuum is formed by the air pumps, exhaustive power which cannot fail to cause a current of fresh air to exist in and through the workings of any mines, pits, or other places where necessarily used. They also purpose using part of the same machinery for the purpose of extinguishing fires in pits, mines, and other places than those which may originate from the explosion of gas or otherwise in any of the said works or places. They claim that they create by a suitable apparatus or more of them carbonic acid gas or other gases whose properties are of such a nature as to quickly extinguish fire, and which gas or gases by the same or other pumps, pipes, and cisterns, or other conveyance used for the purpose of ventilation in the same works.

The way in which they intends carrying out their extinguishing process is by the use of one or more generators fixed contiguous to the air vault, tank, or cistern, wherein to create an abundant supply of carbonic acid gas, or other gases qualified for the purpose, and which, by reversing all or such of the valves uses for ventilation, and opening others connected with the pumps, they draw the deadly gas through the cistern, and thereby force the (say) carbonic acid gas, or other suitable gases, into any part of the workings, and thereby effect the object sought for. They also by the use of the air-pump force such gas or gases through the pipes or hose for the purpose of extinguishing fires as by the use of such deadly gases so forced it will have a greater force or effect than that of water, and more readily obtained, as by always having one or more generators (either stationary or movable) ready charged no time is lost, as in the case of shortness of water, but the gas can be made and applied instanter. We do not confine themselves to any class of engine, but the application of such as may be found most convenient, either portable or stationary.

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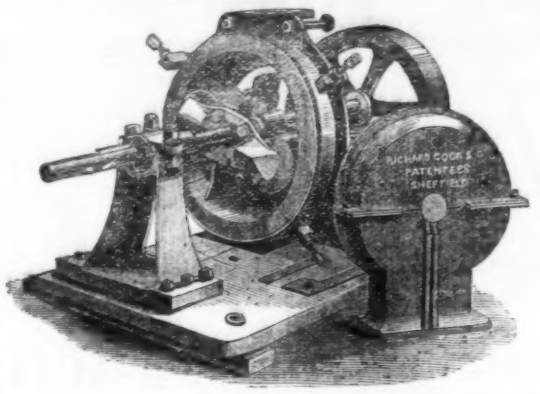

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